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A longitudinal program of workshop-centered rehabilitation services was administered to mentally retarded adolescents. Results with the 36 remaining at the end of the 3rd year indicated that most characteristics central to vocational development were stable by early adolesence; a "competence cluster" of variables covaried systematically; high and low employability groups differed on most basic status variables; and the Purdue Pegboard was the best single predictor of employability. However, neither the control and experimental groups nor the attrition group and the remaining 36 differed significantly. Two employability groups were determined by production and ratings: the high group, composed of lower class Negroes, ranked higher than the low group, of middle class whites, on work behavior ratings and IQ levels. The magnitude of the level of aspiration ratios tended to correlate negatively with the employability index and the competence cluster. self concept variables correlated positively for employability for Negroes and negatively for whites. The followup of 33 subjects in the 5th year indicated that when the relationship between rated employability and actual adjustment was calculated, the resulting prediction was significant (p .05). (Author/JD)

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Page	Correction
192, line 1	" . . . and when the Aspiration Index variable is deleted . . ."
194, line 8	Appendix E
220, line 4 from bottom	" . . . and the manner in which . . . "
226	Legend for these figures is found on page 228
230, line 10	"Factor II seems most . . . "
238, line 11	Appendix G

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FINAL REPORT
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THE VOCATIONAL DEVELOPMENT OF MENTALLY HANDICAPPED ADOLESCENTS: AN EXPERIMENTAL AND LONGITUDINAL STUDY

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Lee S. Shulman

August 1967

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Michigan State University

East Lansing, Michigan

PROLOGUE

The present study is the result of a unique and fruitful partnership between Michigan State University (MSU) and the Chicago Jewish Vocational Service (CJVS). Early in 1960 members of the staff of CJVS began to discuss the need for a program of vocational rehabilitation that would begin early in adolescence. They had already had a number of years experience with their Vocational Adjustment Center, a workshop-centered rehabilitation program for handicapped and disturbed clients of age 18½ and above. This program had been designated a prototype for work with the emotionally disturbed. With many of their clients they felt that contact at age 18½ was coming at too late a point in their development to effect the major change desirable. For this reason CJVS began developing the outlines for a program of vocational rehabilitation which would begin in early adolescence.

In the summer of 1960 a group of 14 and 15 year old adolescents representing a range of intellectual, emotional and physical handicaps were brought together into a sheltered workshop. The purpose of the workshop was to aid these youngsters in the development of work-appropriate behaviors and attitudes. This was the first pilot session of the Vocational Development Center, then called the Handicapped Teenage Project.

On the basis of the first summer's experiences, it was decided to concentrate on subjects whose major handicap was mental retardation. In the summer of 1961 a sample of mentally retarded adolescents was selected for the second pilot study. During this summer a treatment program was elaborated and assessment measures were developed and refined. By this time a number of sources of financial support were made available to support the project. Funds were granted to the Chicago Jewish Vocational Service for the conduct of this project by the Wieboldt Foundation of Chicago, United Cerebral Palsey Association, the Chicago Heart Association, the North Shore Service League and the Jewish Federation of Metropolitan Chicago.

After two years of pilot study in 1960 and 1961, the present investigation was begun. This volume is a report of the research conducted in the Vocational Development Center between 1962 and 1967. In the fall of 1963 the principal investigator moved from a position at the Chicago Jewish Vocational Service to the College of Education, Michigan State University. It was at that point that the present project became, albeit informally, a joint venture of CJVS and MSU.

From June 1965 to the present time the project has been supported by a grant from the Bureau of Education for the Handicapped of the United States Office of Education. It is under these auspicies that the final collection and analysis of data and the writing of this report have been completed.

Whenever a study of this scope is conducted, the contributions of many people and organizations must be acknowledged. It will unfortunately be impossible to acknowledge by name the activities of all the individuals who served as foremen, counselors, examiners and interviewers over the course of this project. However, a number of individuals whose efforts were particularly noteworthy must be named at this time.

The assistance of the Wieboldt Foundation of Chicago, United Cerebral Palsey Association, the Chicago Heart Association, the North Shore Service League and the Jewish Federation of Metropolitan Chicago made the initiation and early implementation of this project possible.

The cooperation of the Chicago Public Schools was of great assistance in the selection of subjects and the collection of data.

William Gellman, Executive Director of the Chicago Jewish Vocational Service and Simon Friedman, Associate Executive Director, were instrumental during the earliest phases of this project in attempting to transfer their experiences with the Vocational Adjustment Center into plans and programs for the present project.

Asher Soloff, Research Coordinator of CJVS worked with the principal investigator from the very inception of this study in the design of the overall research program and its conduct. He was also responsible for writing the original proposals to the Wieboldt Foundation and the United Cerebral Palsey Association which provided the initial support for this research and service program. The effects of his work and his planning are apparent through the entire course of this research. Lila Louik, Research Secretary at Chicago Jewish Vocational Service performed a wide range of roles so competently over the entire duration of this program that one cannot begin to enumerate them. Daniel Kuzuhara served as Supervisor of the Voca-

tional Development Center from 1962 through 1965. In this role he was responsible for administering all phases of the program. He also contributed the first three case studies in Chapter XII of the report. In addition, literally dozens of CJVS staff members participated in the pilot, service and data collection phases of this program between 1960 and 1967.

The assistance of many people at Michigan State University must also be acknowledged. The formal relationship between Michigan State University and the Chicago Jewish Vocational Service began in June 1965 when the Office of Education awarded a research grant to MSU in cooperation with CJVS for the completion of this study. Those who assisted the principal investigator during these last two years of the project at MSU were Joan Lynas, Michael Loupe, Merlyn Mondol, Bettie Farace, Laura Lichleiter, Joyce Bredahl Wong, Miles Simpson, Mary Braseth and Richard Piper. Mrs. Lynas contributed the fourth case study in Chapter XII; Mr. Loupe contributed the analyses of interview data in Chapters VII and X. Barbara Savery and Joyce Stewart served ably as secretaries to the project at MSU and shared the arduous task of typing this manuscript.

The influence of Benjamin S. Bloom was felt by the principal investigator throughout the planning, implementation and analysis of this research. Though he bears no responsibility for what is in this report, Professor Bloom was instrumental in teaching the principal investigator much concerning the longitudinal study of human behavior. The advice and counsel of David R. Krathwohl was invaluable in the planning of the last stages of this research.

Finally, the assistance of Judith Shulman must be acknowledged in this report. Without her many helpful comments about portions of the manuscript and her devoted care, feeding and maintenance of the principal investigator during a time when he was far less a husband and father than a researcher, this report could not have been completed.

The above list of acknowledgements may seem overly long. But no study of this magnitude is ever an individual effort. If there is any value to this research, the credit belongs to those named above.

L. S. S.
August 1967

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CHAPTER I

INTRODUCTION

This report describes a study of the vocational development of mentally handicapped adolescents. The overall design was experimental and longitudinal in nature; that is, groups of mentally handicapped children who had been randomly assigned to experimental and control group status at age 14 were studied longitudinally. Although the general objective was to investigate the development of vocational characteristics specifically, the research encompassed measures of intellectual, emotional and social growth as well.

The study was originally conceived by members of the staff of the Chicago Jewish Vocational Service. This agency has long been involved in attempts to develop new methods for the vocational rehabilitation of individuals hampered by all manner of handicaps. One of their earliest innovations was the development of the Vocational Adjustment Center, which combined diagnostic and rehabilitative services for clients of mixed handicaps beginning at age 18. (Gellman, et al., 1957) This center was designated a prototype project for work with the emotionally disturbed by the Office of Vocational Rehabilitation in 1955. Although experiencing a high proportion of successes in this program, members of their staff were disturbed by the still distressingly large number of failures.

They speculated that it might be possible to prepare some individuals for the world of work only by beginning rehabilitation services earlier in their lives than was possible within the context of the Vocational Adjustment Center. Little was known, however, about the course of vocational growth in the handicapped adolescent. Any proposed study would thus have the dual purpose of describing the process of vocational development as well as investigating ways of modifying it.

At the inception of the study many techniques existed for assessing the general competencies of the mentally handicapped. There was, however, a major lacuna in this diagnostic arsenal. This lay in the absence of well-validated methods for measuring the vocational development of the handicapped. Since a great deal of research with this population is directed toward vocationally relevant, as well as academically relevant criterion variables, such a technique was extremely desirable. In the present study a technique for assessing the vocational development of mentally handicapped adolescents is studied, and attempts are made to validate this technique against other standardized instruments used in the field.

As we shall see in the next section, we are confronted by a dearth of studies which examine the development of a wide range of characteristics longitudinally among groups of mentally retarded adolescents, especially in the early adolescent years beginning at age 14. There are many basic research questions about mental handicaps and their development which can only be answered through a study of this kind. Given such an understanding, it is then critical to discover the modifiability of such developments as a result of rehabilitation experiences beginning in early adolescence and lasting over an extended period of time.

In order to answer such questions the present study was designed both experimentally and longitudinally. Beginning in 1962 two groups of 14-year-old mentally handicapped adolescents were followed longitudinally. The experimental group received rehabilitation services while the control group, though receiving no service, was studied with all the research measures. These rehabilitation services centered around a sheltered workshop experience, which is described in detail in Chapter III. Assignment to the experimental and control groups was made on a random basis. In addition to the original experimental and control group, a second pair of experimental and control groups was added during the second year of the study. The purpose of these two new groups was to afford the possibility of replicating the findings growing out of the first pair of groups in the study. The availability of replication samples for possible cross-validation purposes is an additionally unique characteristic of the study.

The major general objectives of this project have thus been (a) to study the process of vocational development for a sample of educable mentally handicapped adolescents, (b) to examine the effects of a rehabilitation program, using a sheltered workshop initiated in early adolescence as its principal instrument, in modifying this process of vocational development and (c) to identify those characteristics which contribute to and which hinder the success of these youngsters in their efforts to become adequately functioning adults.

CHAPTER II

RELATED LITERATURE AND OBJECTIVES

In this chapter we will examine the literature pertaining to the employability of the educable mentally handicapped. We will then examine a theoretical model, that of Erikson, which influenced the selection of the particular treatment conditions examined in the present study. Some aspects of longitudinal research will then be discussed, with special reference to the implications of Bloom's work on stability and change in human characteristics. Finally, we will state the specific research objectives of the present investigation.

Employability and the Handicapped

This project is concerned with the needs of retarded adolescents, more specifically with those who are considered educable and are attending school, typically are in special classes for the mentally handicapped, and are believed to have the potentiality for becoming at least "marginally independent," a term employed by Kirk (1960) to describe this group at the adult level.

The characteristics of educable mentally handicapped children have been succinctly described by Kirk. These children learn at a slower rate than the average child; they do not differ greatly physically from the normal, but "in intellectual functions and those achievements relating to intelligence, the growth is significantly slower. Thus, we have an individual who has not grown evenly, so to speak. Unless the environment, including school, can be adjusted to this discrepancy in growth, the child becomes out of phase with his environment."

"There is a tendency for these children to leave school at an early age. . . . In general, they are placed in society earlier than the normal and tend to drift occupationally." (1960, pp. 37-38)

This picture is derived from short-term studies, there being few studies of a longitudinal nature. Such studies as there are have indicated that many of this group make their way with reasonable success through adult life, particularly if employment conditions are favorable. Thus, a follow-up study by McIntosh (1949) of 1,000 "non-academic" boys in Toronto, reported in 1949, found that only a small number were unemployed.

Bobroff (1956), reporting on a 1953 follow-up of Detroit youth who left special classes for the mentally retarded in 1941, found that most were successfully employed in competitive employment.

Collman and Newlyn (1956), reporting on British experience, state that, upon follow-up, about two-thirds of "subnormal ex-pupils" were employed.

Sarason and Gladwin (1958), surveying the available evidence in this area, point out that the so-called mentally subnormal in large numbers "fill an acceptable social role" in adult life.

Kirk (1960, p. 40) concludes as follows:

> 1. Under favorable conditions of education and with community acceptance about two-thirds to three-fourths of the school age mentally retarded group adjust marginally to community life, obtain unskilled and semiskilled jobs, and support themselves and their families without extensive help from agencies. This group is not delinquent or socially maladjusted. They are actually not considered mentally retarded at the adult level in the community.
>
> 2. Of those who had been classified as mentally retarded at school age, approximately one-third to one-quarter present social problems and require habilitation in terms of social and occupational training after leaving school. Court records, delinquency and inadequacy on jobs represent their problems. It is for this group that greater effort is needed by vocational rehabilitation agencies. This is probably the group that requires sheltered workshop training and social guidance.

It is this second group that is our concern. They are numerous, and they are particularly likely to be in difficulties in view of the contracting employment opportunities for unskilled labor. Goldstein and Heber (1959, pp. 35-36) point out that "on a short-term basis, increasing automation may result in a greater percentage of the working forces being cast into competition for jobs currently available to the retarded." They suggest, however, that "on a long-range basis, the outlook may be brighter. Manpower specialists stress the necessity of upgrading all levels of the population as a result of the increasing complexities of our society. This would imply a greater need for full utilization of all people including the retarded."

Adjustment in adult life on the part of the group of retarded which is our immediate concern is generally recognized to be primarily a matter of emotional maturity. The Illinois Governor's Commission on Mental Retardation (1958) reported that "studies show the mentally retarded fail in their initial job placement not so much for lack of simple skills to do their work, but because of inadequate understanding and appreciation of other factors. Among these factors contributing to initial failures are such matters as personal hygiene, regularity and promptness in reporting for work, accepting authority, personal relations with co-workers, and the management of money."

Boly and Cassell (1956) find that "job maladjustment on the part of the mentally retarded appears to be primarily due to an inability to establish satisfactory relations with employer and fellow employees rather than to a lack of ability to perform specific vocational skills."

Michal-Smith (1950), rating opinions of both industrial firm and institutional personnel found that "the four characteristics ranking highest within the social employment area were being emotionally even-tempered, having a feeling of loyalty to the company, being personally attractive, and not being forgetful."

McIntosh (1949) reported that other factors, such as emotional stability and personal drive, were as important as even twenty points in the IQ scale within the range of 65 to 95 in relation to employment success. Peckham, in an effort to find out why the mentally retarded lost or quit their jobs, according to Kirk (1957, p. 31), "found that they quit jobs because of teasing and ridicule of fellow workers; because they have difficulty in social and vocational sophistication, such as having difficulty in transportation, leaving work without notification, unwarranted sick leaves, and so forth; because they evidence dissatisfaction with the salary; because they do a poor job in budgeting their money; because they lack initiative and job responsibility; and for impulsive reasons. They quit jobs because the job is below the dignity of the family; they quit jobs because of inability to read directions. Rarely do they lose their jobs because of inability to do the required task."

A Developmental Model: Erikson

The writings of Erik Erikson (1950) have been extremely helpful to us in understanding both the nature of the deficits that handicapped adolescents are likely to exhibit in the emotional, social and vocational spheres, as well as the rehabilitative strategy most likely to remedy these deficits. The major thesis of this research is that for mentally handicapped individuals, the two most critical stages, in Erikson's terminology, are those that are characterized by the psychosocial crises "industry versus inferiority" and "ego-identity versus role diffusion." These two stages, which correspond roughly to the periods of latency and early adolescence respectively, begin when the individual first leaves the protective confines of his family and his home for extended periods and includes the period when the individual is expected to develop an integrated ego identity.

In the stage of industry versus inferiority, the child first develops the sense of being able to make things and to make things with others. Hence, industry is both a manipulative-proficiency characteristic and a social-proficiency characteristic. Erikson notes that the early years in school, which are the child's first contact with society's demands for productive output, are also the years where the child is first thrust into a group of peers within which he must learn to produce. Hence, coincident with the time when the child's somatic development prepares him for a role more or less independent of the constant supervision of his family, society thrusts upon him the psychological demands of industry and the interpersonal demands that this industry be accomplished within a social matrix. It is our hypothesis that the handicapped individual whose deficit leads him to experience failure early in his latency years vis-a-vis those tasks demanding academic proficiency, suffers a concomitant deficit in the social sphere, so intimately are these two areas intertwined.

In Erikson's model, it is the sense of industry which serves as the raw material from which the individual, with the onset of adolescence, begins to form an ego identity. Given the knowledge of what he can make and how he makes it with others, he is now prepared to think in terms of a future stable role as maker in a society of other makers. Thus, he becomes prepared to begin to deal with the problem of developing a realistic vocational identity.

It is likely that many handicapped adolescents have never successfully coped with the problems of industry versus inferiority. Therefore, it was our plan to build a program of experiences which would serve to provide these adolescents with the kinds of achievement experiences they have presumably lacked during latency. The early parts of the program were devoted to building in a sense of industry which hopefully would override the already present deeply seated feelings of inferiority. This could be done only within a social matrix, however, because the development of a sense of manipulative competence without the corresponding development of feelings of social competence would still leave the individual with a rather uneven developmental picture. In Erikson's words,

> The normally advanced child . . . learns to win recognition by producing things . . . becomes ready to apply himself to given skills and tasks . . . develops industry, i.e., he adjusts himself to the inorganic laws of the tool world. He can become an eager and absorbed unit of a productive situation. To bring a productive situation to completion is an aim which gradually supersedes the whims and wishes of his autonomous organism. His ego boundaries include his tools and skills: The work principle (Ives Herrick) teaches him the pleasure of work completion by steady attention and persevering diligence.
>
> Again, his danger, at this stage lies in a sense of inadequacy and inferiority. If he despairs of his tools and skills or of his status among his tool partners, his ego boundaries suffer, and he abandons hope for the ability to identify early with others who apply themselves to the same general section of the tool world. . . . It is at this point that wider society becomes significant in its way of admitting the child to an understanding of meaningful roles in its total economy. Many a child's development is disrupted when family life may not have prepared him for school life, or when school life may fail to sustain the promises of earlier stages. (1950, p. 226)

Hence, the evidence of the relevant literature in the area of the vocational development of the mentally handicapped suggests that any study of such development must be an extremely comprehensive one. There appears to be little question that the psychomotor ability to perform the specific tasks that constitute the demands of the job are but a small part of the overall demands made upon any worker. Adequately to study vocational development within any population requires that the investigator broaden the scope of research in order to include not only specifically vocational variables, but also the high relevant emotional, social and intellectual variables. Any program which would propose to affect the course of vocational development would have to be equally comprehensive.

The treatment program used in the present study was a workshop-centered approach based upon the earlier pioneering work of the Chicago Jewish

Vocational Service's Vocational Adjustment Center. This approach is described fully by Gellman, _et al_. (1957)

The workshop experience is seen by Doll (1958) as "a device or an idea for assisting the mentally deficient young adult to achieve maximum self-realization in personal happiness and social usefulness." He believes it should be conceived as a comprehensive program rather than a specific operation. "It implies socialization, removal from isolation, _companionship_, _fun_, _recreation_, _belonging_." Thus, the likelihood is great that a sheltered workshop program combined with other complimentary services will go well beyond the simple vocational focus.

Hence, the questions to which this research was addressed were both developmental and experimental. The present project therefore combined (a) a longitudinal study of the development of handicapped adolescents, (b) a broad spectrum of variables which included those vocational, psychological, intellectual and social characteristics which previous research had indicated are extremely critical in the development of the mentally handicapped adolescent, and (c) an ongoing experimental treatment to investigate the amenability to change of these important characteristics.

Longitudinal Research on the Handicapped

There are basically three kinds of longitudinal studies which can be conducted in this area. The first is the _simple longitudinal study_. This kind of study involves a sample of subjects, selected in some unbiased manner, which is followed over time with repeated measures of a particular set of characteristics taken at regular intervals. This is the type of study most characteristically conducted longitudinally, and constitutes the typical study reviewed by Bloom in his monumental Stability and Change in Human Characteristics (1964). A second type of study is the retrospective longitudinal study or retrospective follow-up study. In this kind of study, individuals who had experienced a particular kind of training at some time in the past (e.g., special classes for the retarded) are followed up a number of years later and compared to some other group having ostensibly the same characteristics, who did not share the earlier experience. Assignment to each of these groups is, of course, far from unbiased under these circumstances and hence, interpretation of the findings must always be made with great caution. Yet, the greatest number of studies on the effects of special class training and other service programs for the handicapped have fallen into this retrospective category. Most of the studies reviewed by Goldstein (1964) in his excellent and comprehensive review of the literature on the social and occupational adjustment of the retarded are of the retrospective longitudinal variety. Very few studies reported by Goldstein are of the experimental longitudinal variety.

The experimental longitudinal study combines the characteristics of simple longitudinal research with that of experimental investigations. That is, subjects are assigned at random to more than one group, which then constitute either experimental and control groups or a series of experimental groups. This type of study is clearly the most powerful of the three here described, though it is not without problems. One of the earliest applications of experimental longitudinal design was a series of studies on the effects of early nursery school experience on intellectual development conducted by researchers at the Iowa Infant Welfare Station (Wellman, 1940). These studies were attacked by critics who insisted that the investigators had ignored the effects of statistical regression and the unreliability of their test instruments in interpreting their findings. These arguments continue even today.

Some fifteen years later, a series of experimental longitudinal studies were conducted at the University of Illinois which managed rather deftly to avoid the kinds of problems which hampered the Iowa studies. The research of Kirk (1958), Gallagher (1960), and Goldstein, Moss and Jordan (1965) contributed greatly to an understanding of the development of mentally retarded youngsters from age four and a half to age ten. These studies were conducted for periods of two to four and a half years each.

Yet, there remains a "dark ages" in the study of the mentally handicapped. The Illinois studies give us a rather rich picture of the development of the retarded child from age four and a half through age ten. The many retrospective longitudinal studies indicate the surprisingly high proportion of these youngsters who eventually become productive citizens and the nature of the employment that they attain. However, in what manner do these individuals traverse the intervening period of adolescence and what are those factors which might be identified during adolescence which predict which youngsters will and which will not become employable? Are there any kinds of services which can be provided during adolescence that can improve the likelihood that certain youngsters will become employable? These are questions which previous studies have failed to answer. Their examination will be a major focus for the present research.

The longitudinal study of a characteristic such as employability presents a number of rather difficult methodological problems. Let us contrast the problem of measuring employability with that of longitudinally studying a much simpler characteristic such as height. Although the child and the adult differ markedly in the amount of height each possesses, there is no question that the same metric, namely some scale of inches or centimeters, can be used for measuring the height of both child and the adult. Height exists in the same form for both the child and the adult and differs only in magnitude. A characteristic such as employability presents a much trickier problem. Work does not exist for the adolescent in the same sense that it exists for the adult. The "world of work" as we know it is strictly an adult domain. We are thus in a position of attempting to measure longitudinally a variable which only exists in some pure form at the terminus of the proposed study.

Our solution to this problem, which will be examined in greater detail in a subsequent section of this report, was the creation of a diagnostic assessment program. We attempted to design an assessment situation which would simulate as closely as possible the conditions of actual employment. By setting up realistic work situations and engaging the subjects in actual work tasks in a work-like setting under the supervision of foremen and for an hourly wage, we were able to observe the characteristics of their vocational behavior. These included productivity, relationships with peers and subordinates, and the general characteristics of appearance and behavior in the work situation. Our hope was that in simulating a set of conditions which do not yet exist for a typical adolescent, normal or retarded, we could develop an assessment of the extent to which he had developed the behaviors necessary to meet those conditions when they did appear a few years later in his life.

This study thus sits midway between two other kinds of studies that have been more widely conducted. The first, the experimental longitudinal study of the effects of treatment programs on the development of very young handicapped children, has rarely been extended into the period of adolescence. The second, the retrospective longitudinal study, has dealt with many of the variables which are central to this study, but not in an ongoing longitudinal form. It is hoped that the present study can bridge the gap that exists between these two other research genres.

The Work of Bloom

The work of B. S. Bloom (1964) influenced the design of this study, both substantively and methodologically. A major point of Bloom's research is that the cumulative developmental increase in the stability of a given characteristic can be described quantitatively over the course of development. Hence, we can ask questions such as: "How much of intelligence is already accounted for by age seven?" "At what ages do characteristics of social competence increase most rapidly?" Bloom maintains that by quantitatively describing the developmental curves for given characteristics, we can infer what the most appropriate points in time would be to interfere with the development of these characteristics in order to modify their developmental pattern. In our project we have been interested in interfering with the ongoing pattern of vocational development in the handicapped adolescent in order maximally to modify the eventual outcome in the direction of adaptive vocational maturity.

Furthermore, Bloom's critical analysis of longitudinal studies has emphasized the importance of repeated measurements at regular intervals in any longitudinal study. This is a major reason for our repeated administration of the same interviews, assessments and tests annually for both the experimental and control group participants in these studies.

Bloom's thesis also provides an interesting theoretical counterpoint to the general experimental hypothesis that a rehabilitation program which begins in early adolescence can have a positive effect on the vocational development of mentally retarded adolescents. One of the major findings of Stability and Change in Human Characteristics is that most of the critical stable characteristics which develop in human beings achieve 50% of their eventual growth very early in life and reach asymptote at some time during adolescence. If vocational development is at all parallel to physical development, intellectual development, academic achievement development or ego development, the likelihood that a program of interference that begins at age 14 can have much effect seems very small.

One of the major principles put forward by Bloom is that the extent to which the development of a given characteristic can be modified is a direct function of the amount of change still remaining to be made in that characteristic at the point in time at which the modification is attempted. By age 14, Bloom would contend that only 5% of physical growth is yet to be attained (in males), 5% of growth in intelligence, 20% of growth in academic achievement and 30% in the growth of the ego. Most of the theories of vocational development to which we have referred would place vocational development at some nexus of those four other developmental areas. Hence, Bloom might predict that the characteristics contributing to vocational maturity would already be so highly stable by age 14 that the likelihood of major changes is quite small.

On the other hand, nearly all of the studies to which Bloom refers in his book and upon which he bases his developmental growth curves, are of the simple longitudinal rather than the experimental longitudinal variety. It is possible that inferences from simple longitudinal data to predictions of the effects of experimental longitudinal treatments may be as unfounded as are many predictions of causation based upon correlational data. If, however, the results of the present study show both relatively high stability for the variables under study over time, and correspondingly small amounts of change attributable to the effects of the experimental treatment, this may lend support to predictions that can be made on the basis of Bloom's thesis.

It has been the purpose of this section of the report to examine the related research in the areas of general human development, specific developmental problems of the handicapped, problems of modifying the developmental course of the mentally handicapped and the principles of general methodology in longitudinal research. These have each, in turn, been related to the nature and purposes of the present study. We will now enumerate the objectives pursued in this research.

Objectives of this Study

As stated earlier, the general objectives of this research have been:

1. To study the process of vocational development for a population of educable mentally handicapped adolescents.
2. To examine the effect of a rehabilitative program, utilizing a sheltered workshop initiated in early adolescence as its principle instrument, in modifying the process of vocational development.
3. To identify variables which are related to, contribute to and may hinder the success of these youngsters in their efforts to become successfully functioning adults.

A number of specific objectives grow out of the three stated above. These will now be enumerated in the form of questions for which empirical answers were sought. In most cases, an objective will contain two parts; one pertaining to the longitudinal-descriptive aspect of this study, and the other relevant to the experimental treatment under investigation.

1. How can the pattern of development of the vocational or work behavior of the mentally handicapped adolescent be characterized? What is the relationship between the behavior of EMH adolescents under simulated work conditions and other psychological and individual background variables gathered concerning these subjects? To what extent is work behavior amenable to change in response to an intensive program of rehabilitation services? Which aspects of work behavior are amenable to change and which appear to remain unchanged or grow independent of any attempt at professional interference?
2. What is the developmental pattern of the structure of intelligence, as reflected in the subscales of the Wechsler Intelligence

Scale for Children, among mentally handicapped adolescents? Which aspects of intelligence are most amenable to change and which are least amenable to change? How are these subcategories of intelligence related to other vocationally relevant aspects of the development of the EMH adolescent?

3. How are an individual's family and home background and the general characteristics of his parents and peers related to his later psychological and vocational development?
4. How can the ongoing level of aspiration patterns of mentally handicapped adolescents be adequately characterized and quantified? What are the relationships between level of aspiration patterns in the EMH adolescent and other psychological characteristics? To what extent are level of aspiration patterns in the EMH adolescent amenable to change under conditions of intensive rehabilitative services?
5. In what manner does the self-concept of the mentally handicapped adolescent undergo change from early to later adolescence? How is this development related to the youngster's participation in an intensive rehabilitation program? To what extent is the self-concept of the EMH adolescent amenable to change?
6. What relevant differences exist between white and Negro children who, as adolescents, are categorized by the schools as educable mentally handicapped? Do these groups differ in their initial characteristics and do they differ in their amenability to change within a program?

7. What characterizes those adolescents who are able to profit from a program of rehabilitative services and distinguishes them from those adolescents who either cannot profit from such an experience or will develop adequately even without it?

The research to be described presently was directed at an attempt to answer these basic questions. In the next chapter, we will describe the rehabilitation program which was developed for this study, the research design created to examine its effects and the instruments used to measure the changes that occurred.

CHAPTER III

DESIGN AND PROCEDURES

The research design for this study was experimental and longitudinal, involving two experimental groups and two control groups. One experimental-control pair began the program in the summer of 1962, completing their active participation at the end of the summer, 1964. A second pair of groups, experimental and control, began in 1963 and completed their active programs in 1965. A final follow-up was conducted for all accessible subjects in the summer of 1967. Thus, a total of five years elapsed between the first and last data collected in relation to this study.

The general experimental and service design for the study is reported in Table 1. Data were collected on all experimental and control subjects during a portion of each summer designated as the diagnostic assessment period. In addition, the experimental groups received year around-service as indicated in the table.

In the subsequent sections of this chapter we will discuss the selection of the sample for this research, describe in detail the program which constituted the experimental treatment, review the

TABLE 1

DESIGN OF THE EXPERIMENT

Group	Summer, 1962	School Year, 1962-63	Summer, 1963	School Year 1963-64	Summer, 1964	School Year 1964-65	Summer, 1965	Summer, 1967
Original Experimental Group	1 Week Diagnostic 3 Weeks Intensive Service	1-Day-A-Week Service	1 Week Diagnostic 3 Weeks Intensive Service	1-Day-A-Week Service	1 Week Diagnostic 3 Weeks Intensive Service	No Service	Follow-Up	Final Follow-Up
Original Control Group	1 Week Diagnostic	No Service	1 Week Diagnostic	No Service	1 Week Diagnostic	No Service	Follow-Up	Final Follow-Up
New Experimental Group			1 Week Diagnostic 3 Weeks Intensive Service	1-Day-A-Week Service	1 Week Diagnostic 3 Weeks Intensive Service	1-Day-A Week Service	1 Week Diagnostic	Final Follow-Up
New Control Group			1 Week Diagnostic	No Service	1 Week Diagnostic	No Service	1 Week Diagnostic	Final Follow-Up

diagnostic assessment measures used in the course of the study and outline the strategies of data analysis planned to answer the questions posed as the objectives of this investigation.

Selection of Samples

At the request of the Chicago Jewish Vocational Service, and with the formal cooperation of the City of Chicago Board of Education, a total of 180 referrals were received from sixteen schools in the Chicago school system. Only sixteen schools were used because only selected buildings in the public school system house EMH classes. It had been requested that these schools refer to our program all EMH adolescents between 14 and 15 years of age with most recently tested IQ's between 50 and 75. A request was also made that those retardates with severe emotional problems that were reflected in violent acting-out behavior be excluded from the list of referrals. This request was made as a result of experiences with a pilot group of youngsters during the previous year. In that pilot study, two boys with severe acting-out behavior patterns had managed to command the attention of practically the entire staff, much to the detriment of the other clients.

One hundred and eighty referrals were received, from which a pool of 87 subjects was selected. Approximately half the original referrals were screened out as ineligible because of age, IQ's falling outside the appropriate range, major physical disabilities, etc.

These 87 youngsters were then randomly assigned to either experimental or control group status, within stratifications for sex and race. Race stratifications were approximately two-thirds white and

TABLE 2

CHARACTERISTICS OF SAMPLES ORIGINALLY SELECTED FOR STUDY BY EXPERIMENTAL STATUS, SEX AND RACE

Race	Sex	Old Experimental	Old Control	New Experimental	New Control	Totals
White	Male	5	3	4	3	15
	Female	6	8	4	4	22
Negro	Male	2	3	2	2	9
	Female	2	4	2	1	9
Totals		15	18	12	10	55

one-third Negro. There were generally more females than males in the pool. Parents of those youngsters were then contacted in random order either by letter or phone and selection was halted when an experimental group of 15 and a control group of 18 subjects had been selected. More control subjects were included because we then erroneously believed that attrition would be higher in a group receiving no service. The relatively small group sizes were a function of the limited funds available for the service program. There were no significant differences in average IQ or age between the experimental and control groups.

After one year, when attrition had cut the size of the experimental group by almost one-half and that of the control group by one-third, the two new groups were selected in essentially the same manner. These new groups included 12 experimental clients and 10 control. The original breakdown, by sex and race, of the experimental and control groups participating in this study is reported in Table 2. The details of attrition and its consequences are discussed in detail in Chapter IV of this report.

Experimental Treatment: The Service Program

The experimental treatment revolved around a sheltered workshop situation. For three weeks during the summer, each experimental client came to a workshop situation in which actual jobs, subcontracted through local manufacturers, had to be done. He was treated as a worker and received an hourly wage. Foremen were psychologically trained, holding Master's degrees in psychology, guidance or vocational rehabilitation, or having teaching experience in special education. In addition to working three hours a day, subjects participated in individual and group counseling sessions. Parents of the subjects also were counseled. During the school year, the subjects worked one day a week (Saturday) and continued to receive counseling services.

The professional staff attempted to structure work situations so that, while progressively applying greater pressure over time, each subject could experience success in a wide range of situations. The kinds of tasks presented to the subjects in the workshop setting were extremely varied. They included letter-shop work, packaging of bathroom sachets, painting small toy materials such as plastic cars, repairing bicycles and making cardboard sunglasses. Most of these tasks could be organized either as individual or assembly-line jobs. Almost all involved heavy packing and loading components as the final preshipping step in the total manufacturing process.

Counseling took place over three kinds of conditions. The first, and possibly most effective type of counseling, took place in the workshop itself in spontaneous reactions to problems that arose within the work setting. These kinds of sessions, which Redl calls "life space interviews," deal with a problem while it is still fresh and, whenever possible, in the very place where it occurred. It is under these circumstances that the psychological training of the foremen becomes extremely important. The second type of counseling was individual and scheduled. In this context, subjects were seen by a counselor either as a regular service or, when necessary, in reaction to a problem which had arisen but was not amenable to the "life space interview" technique.

The third type of counseling was the regularly scheduled group session conducted no less than three times a week during the summer and every Saturday during the school year.

Regular staff meetings with consultants were held to plan the future programs of clients. During the early part of this program, Dr. Bruno Bettelheim of the University of Chicago acted as the case consultant. In these sessions, members of the staff compared notes on the behaviors observed during workshop and counseling sessions in order to discuss problems which had arisen and to plan the specific tasks and expectations for individual clients. Thus, in general, the experimental treatment involved work-centered attempts to build in a sense of "personal industry" through progressive, step-like work experiences in a sheltered non-threatening setting.

Diagnostic Assessment: The Variables

The annual diagnostic assessment period had three major components. These were (1) the work-simulation period, when each subject was observed in a work-like setting for a five-day week; (2) the interview series with both the client and his parents and (3) the psychological testing program. The data associated with each of these components were collected _each_ summer for all participating subjects.

The work-simulation aspect of the diagnostic assessment period was characterized by its emphasis upon a realistic work-like setting used as a context within which to assess the vocational maturity of the subject. In this regard, the work of Murray and his colleagues of the OSS Assessment Study (1948) was influential in suggesting guidelines for the use of simulated experiences in assessment. The diagnostic period occurs in a social context, where each subject is in the company of other workers who are also subjects, in order to avoid the errors which grow out of isolating worker-task relationships from the other relevant aspects of the work, the worker-worker relationships and the worker-authority relationships. This kind of error is very characteristic of the attempts to assess vocational growth only by tests administered individually in a psychological diagnostic situation.

The diagnostic period in the present study was composed of one five-day week. Three hours of each day were devoted to actual work under supervised and carefully controlled conditions. Subjects were systematically rotated through a range of tasks during the diagnostic week. They were individually rated and scored daily on a series of measures by their supervising foremen during this time.

A typical day finds the subjects arriving at 9:00 a.m. and punching in on a regulation time clock. From 9:00 until approximately 9:30 they begin work on their task for the day, which may be one where individuals work independently, though side-by-side, or may be an assembly-line task. The subject's production on his task from 9:30, which is considered the end of the break-in period, to 10:30, which is the beginning of rest break, is recorded by a foreman. Before the beginning of the second section of the morning's work, the individual foreman approaches a subject and says the following: "Johnny, you were able to make 100 units (or whatever the actual quantity of the subject's production) in the last hour before the break. How many do you think you'll make in the next hour?" The figure which the client then gives as his prediction for the next hour's production is called his "level of aspiration." The pattern of the subject's levels of aspiration over the five-day diagnostic period and the relationships between these levels and previous and subsequent production form important data concerning his vocational development.

During the diagnostic week, extensive records are kept on the day-by-day and hour-by-hour production of each client. Each day, the client's behavior is rated on a 26-item rating scale by his foreman. Under some circumstances, each client is rated independently by two separate foremen. In summary, the measures collected in the work-simulation part of the diagnostic assessment period were:

1. The client's day-to-day and average production. The actual daily production is converted into a score representing the proportion his work represents of that expected of adult workers doing similar work in industry. That is, if a client produces 50 units per hour on a task for which it is estimated that an average industrial worker would produce 75, his converted production score for the day would be .67.
2. The subject's levels of aspiration over the five days of the diagnostic period, recorded in the form of the ratio of his stated production goal (aspiration) for the second hour of work over his actual production figure during the first hour.
3. Day-to-day and average ratings of the subject on the diagnostic rating scale, whose daily scores may range from a high of 25 to a low of 275. The rating scale is reproduced in Appendix A.

The second scource of data is the contents of four interviews administered to the client and his parents. These include (1) an individual interview with the client which dwells mainly on objective material such as school, work, hobbies, etc., (2) a parallel interview with the parents dealing with much the same kind of material, i.e., such information as family background, school history, parent's education, occupation, client's vocational aspirations, number of chores performed at home, medical background, etc., (3) a diagnostic or "depth" interview which is conducted to explore more fully the client's feelings and attitudes related to the same material as the intake interviews, in addition to his perception of his immediate experiences in the work setting, and (4) home interviews with parents and their children which are conducted to observe their interaction in the home situation, the physical nature of the home setting, family income and other relevant characteristics of the home life of the client. The manual containing these interviews is reproduced in Appendix

The third source of data is psychological assessments and ratings. The following instruments were used to assess each subject in the emotional, intellectual and social spheres.

1. Wechsler Intelligence Scale for Children (WISC)

The WISC is a highly reliable individual intelligence test. It is composed of ten subtests, five each in the Verbal and Performance Scales. Summary scores generated are WISC IQ, Verbal Scale and Performance Scale. Because of lack of time for administration of psychological tests, the Vocabulary subtest of the WISC was replaced by the alternate Verbal subtest, Digit-Span, in this study.

2. Purdue Pegboard

The Purdue is a four-part test of manual dexterity using a rectangular pegboard and materials which sit in small cups at the far end of the board. The subject is given a limited amount of time to perform the following four tasks: (1) placing pegs in consecutive holes with the right hand only; (2) placing pegs in consecutive holes with the left hand only; (3) placing pegs in contiguous holes with right and left hands simultaneously and (4) the Assembly task, where the subject must construct four-piece assemblies consisting of a peg, a washer, a collar and another washer as quickly as possible in consecutive holes. In this study, we used a single score summed across all four tasks of the Purdue. This score represented the total number of pieces correctly placed on all four tasks within the specified time limits.

3. Vineland Social Maturity Scale

The Vineland is a scale designed to identify the social development of a youngster. It is constructed much like the Stanford-Binet, in that it employs such concepts as social age, social quotient, etc. It is administered by having a skilled interviewer ask questions of an adult informant, usually the parent, who knows the subject under study well. Questions tap such domains as ability to feed, wash, dress and generally care for herself, ability to locomote around the general locality, general communication skills, maturity of social relations, etc. In the present study, the total raw score generated by the Vineland, in preference to the derived social quotient, is used.

4. Self-Attitude Scale

This is a 150-item self-report scale developed by Guthrie (1961). It is reproduced in Appendix F. Each item deals with an aspect of the subject's conception of himself, to which the subject responds orally with either yes or no. The total score on the scale represents the number of items for which the subject's response reflected a positive judgment concerning himself. When referred to in the text, this score is generally called Self-Concept Scale, or simply, Self-Concept.

5. Projective Drawings

These consisted of a series of drawings administered by a clinical psychologist during the individual testing session, which also included the WISC, Purdue Pegboard and Bender-Gestalt Motor Test. Subjects first drew whatever they pleased. They then drew a person, a person of the opposite sex from their first-drawn and, finally, a family. The two drawings of persons for each year were scored on the basis of the scoring system reported in Appendix D. This score theoretically reflected the maturity of the subject's conception of himself.

The Self-Attitude Scale, Projective Drawings, Level of Aspiration and parts of the Diagnostic Interviews were used as independent measures of self-concept for our subjects. It was our contention that no single method of assessing an individual's conception of himself was likely to be trustworthy. However, we anticipated that an attempt to "triangulate" on the self-concept of individuals by using a range of different methods might prove fruitful.

In addition to the measures described above, a number of instruments were used during the course of the study which were not analyzed systematically along with the others. These included two scales with which teachers of our subjects rated their public school classroom behavior, records of academic achievement in the public schools, measures of sociometric status in the workshop and the subjects' performance on the Bender-Gestalt Motor Test. The two teacher-rating scales could not be used because the data were missing for half the subjects, whose teachers did not respond. The academic achievement data were not usable for the same reason. There often was no record in the school files for the test scores or grades of many subjects. Sociometric status scores were rendered unreliable by gross changes in group size due to attrition and by an inadvertent change in the administration of the sociometric interview during the third year of the study. The Bender-Gestalt Motor Test does not yield a reasonable objective score, and was thus useful only as a supplement to the clinical case studies reported in Chapter XII.

Strategies of Data Analysis

The data generated by the procedures outlined above were analyzed in the light of the objectives stated in Chapter II. The analysis begins in Chapter IV with an examination of the stability of the behaviors studied in this research and their amenability to change. Comparisons of experimental and control groups are followed by comparisons between subjects high and low in general employability, irrespective of experimental or control group status. The character and consequences of the attrition suffered in this study is then examined. Finally, the general nature and predictability of employability, as measured in this study, are discussed.

In subsequent chapters, attention is directed at the findings related to specific instruments employed in this study as they are relevant to the research objectives. Thus, the chapters on the diagnostic rating scale, intelligence, interviews, projective drawings, level of aspiration, white-Negro differences and general self-concept may be considered as relatively independent sub-studies which attempt to answer specific questions raised in the objectives. The chapter on case studies includes four fairly detailed studies of subjects in our sample, drawing equally from objective and impressionistic data.

The Epilogue chapter reports the results of an attempt to locate the subjects in our sample during the summer of 1967, two full years after the last previous formal contact. The final two chapters are attempts to discuss, in general overview form, the results of the many facets of this research, and to draw summary conclusions from them.

CHAPTER IV

STABILITY AND CHANGE

This chapter examines the stability of the variables used in this study over the duration of the project, as well as the comparative changes on those variables undergone by the experimental and control groups. It also reports the intercorrelations among variables within the diagnostic years. In this manner, general hypotheses concerning experimental-control group differences will be tested, and the patterns of the covariation among the basic status variables will be elucidated.

We will subsequently describe the derivation of an index of employability, and explore the manner in which this index discriminated among the subjects in our sample. The prediction of employability will be investigated in the next section, which will discuss a multiple-regression analysis of the relations between first-year scores on basic status variables and employability as measured in Year III. A factor analysis of all the basic status variables for each year will follow. The characteristics of those subjects who did not complete the study, the attrition group, will be examined in order to identify whether they differed significantly from those subjects who remained for the entire project. The chapter will conclude with a brief discussion of the implications of these findings for the general objectives of the study.

Stability of the Data

Logically, the first stage of the analysis will involve an examination of the correlation coefficients which represent the stabilities of the basic status variables across the years of the study for the combined total sample. These stability coefficients are important for a number of reasons.

One way of looking at the consequences of high stability for an experimental study is reflected in Figures 1 and 2. Imagine a situation where experimental and control subjects are randomly drawn from the same population and assigned to experimental or control group status. If the experiment succeeds, the pattern manifested in Figure 1 will be observed. Grossly different slopes will be characteristic of the experimental and control groups and the consequent reshuffling of positions will reduce the stability coefficient for the entire combined group to nearly zero.

Should the stability coefficient remain high, however, this is a strong indication that the experimental treatment has failed. Figure 2 reflects such a situation. Although the experimental group scores appear to be changing, the control group scores are also changing. Consequently, the relative positions of the subjects, whether experimental or control, have changed little and the stability coefficient is quite high. The experimental treatment has had no effect. It should be

Figure 1

RELATIONSHIPS BETWEEN MEASURES AT TWO POINTS IN TIME IN EXPERIMENT WHEN EXPERIMENTAL AND CONTROL GROUPS ARE CHANGING AT CONSISTENTLY DIFFERENT RATES

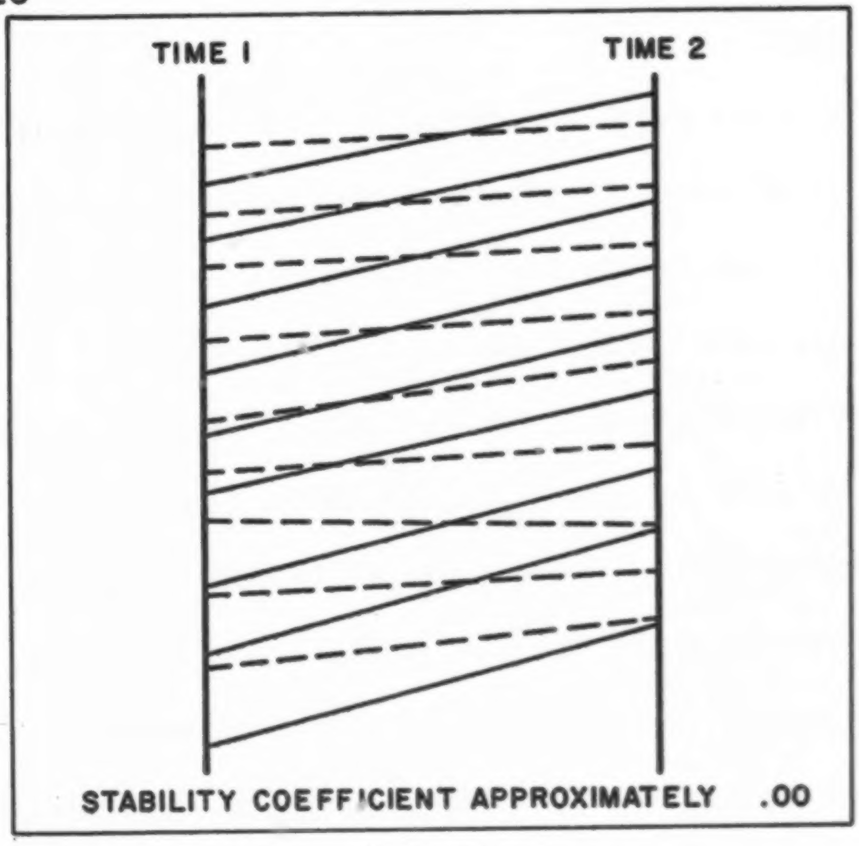
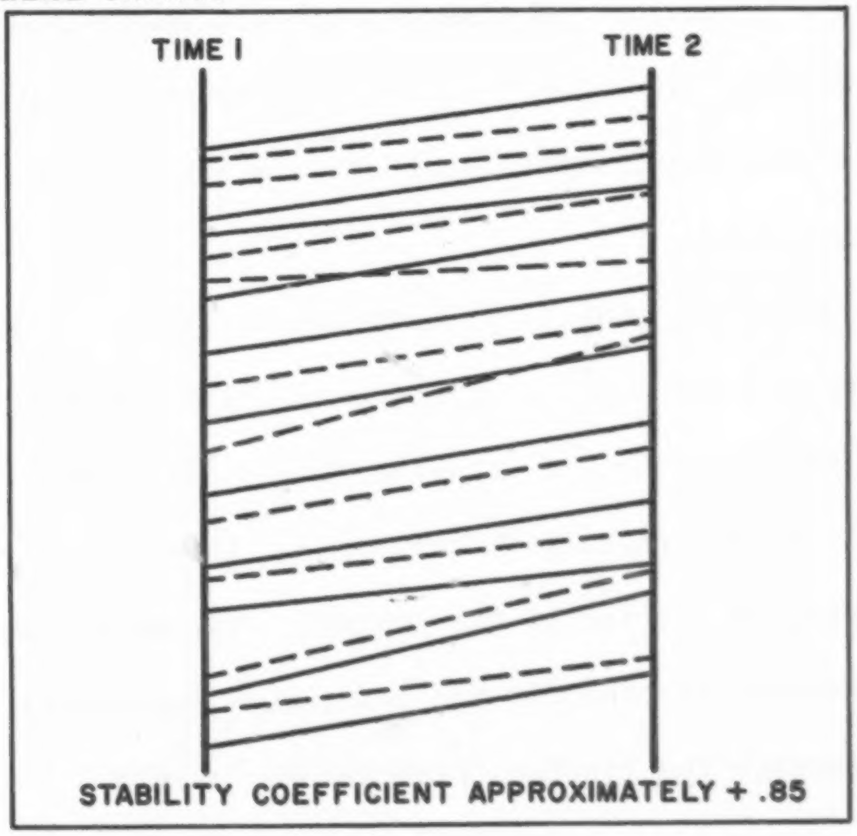

TIME 1
TIME 2
STABILITY COEFFICIENT APPROXIMATELY .00

Figure 2

RELATIONSHIPS BETWEEN SCORES ON THE SAME MEASURE AT TWO POINTS IN TIME IN EXPERIMENT WHEN EXPERIMENTAL AND CONTROL GROUPS ARE UNDERGOING CONSISTENT PARALLEL CHANGE


TIME 1
TIME 2
STABILITY COEFFICIENT APPROXIMATELY + .85

——— Experimental Group
– – – Control Group

noted at this point that, even in a successful experiment, we could expect high stability coefficients for the experimental and control groups separately.

Bloom (1964) has posed the issue in a different manner. For him, the stability coefficient between any two points in time represents the proportion of the developing characteristic already accounted for at the first measuring point. One of his developmental postulates is that the amount of change that can be introduced into the growth of any characteristic is inversely proportional to the degree to which that characteristic has already developed before the point at which attempts are made to change it. As stability coefficients in such cases approach unity, little change can be anticipated as a function of some treatment program. Thus, Bloom would predict that if we find high stability coefficients for our variables between ages 14 and 16, we should expect that by the first measuring period, e.g., age 14, so high a proportion of the possible growth in those characteristics had already taken place as to preclude the possibility of a substantial effect attributable to the rehabilitation program initiated at that stage.

Table 3 reports the stability coefficients for the combined old and new experimental and control groups across all three years of the study. The column representing the stability coefficients between Years I and III is of particular interest, for these constitute the entire active program portion of the project. Tables 4 and 5 report the same coefficients for the old and new groups separately and generally corroborate the findings reported in Table 3.

TABLE 3

STABILITY COEFFICIENTS OF BASIC STATUS VARIABLES FOR COMBINED OLD AND NEW EXPERIMENTAL AND CONTROL GROUPS

	N = 44[a] Year 1-2	N = 35[b] Year 2-3	N = 36 Year 1-3
WISC IQ	.89	.88	.86
WISC Perf.	.86	.88	.81
WISC Verbal	.72	.77	.80
Vineland	.78	.66	.62
Production	.60	.30	.71
Purdue	.87	.91	.86
Self-Concept	.53	.81	.69
Ratings	.43	.76	.36
Level of Asp.	.49	.59	.43
Drawings	.42	.61	.55

[a] For N = 44, the probability of $\underline{r} \geq .31$ occurring by chance = .05; the probability of $\underline{r} \geq .40$ occurring by chance = .01. (two-tailed tests)

[b] For N = 35, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .44$ occurring by chance = .01. (two-tailed tests)

TABLE 4

STABILITY COEFFICIENTS OF BASIC STATUS VARIABLES FOR OLD EXPERIMENTAL AND CONTROL GROUPS

	N = 24[a] Year 1-2	N = 19 Year 2-3	N = 20[b] Year 1-3
WISC IQ	.78	.81	.71
WISC Perf.	.79	.84	.71
WISC Verbal	.64	.65	.74
Vineland	.68	.84	.65
Production	.79	.88	.83
Purdue	.92	.93	.88
Self-Concept	.83	.87	.71
Ratings	.41	.81	.30
Level of Asp.	.32	.69	.65
Drawings	.69	.85	.77

[a] For N = 24, the probability of $\underline{r} \geq .40$ occurring by chance = .05; the probability of $\underline{r} \geq .52$ occurring by chance = .01. (two-tailed)

[b] For N = 20, the probability of $\underline{r} \geq .44$ occurring by chance = .05; the probability of $\underline{r} \geq .56$ occurring by chance = .01. (two-tailed)

TABLE 5

STABILITY COEFFICIENTS OF BASIC STATUS VARIABLES FOR NEW EXPERIMENTAL AND CONTROL GROUPS

	N = 20[a] Year 1-2	N = 16[b] Year 2-3	N = 16 Year 1-3
WISC IQ	.96	.92	.96
WISC Perf.	.94	.91	.93
WISC Verbal	.81	.84	.88
Vineland	.55	.42	.67
Production	.64	.71	.88
Purdue	.79	.85	.81
Self-Concept	.71	.74	.66
Ratings	.60	.72	.46
Level of Asp.	.69	.56	.58
Drawings	.17	.50	.50

[a] For N = 20, the probability of $\underline{r} \geq .44$ occurring by chance = .05; the probability of $\underline{r} \geq .56$ occurring by chance = .01

[b] For N = 16, the probability of $\underline{r} \geq .50$ occurring by chance = .05; the probability of $\underline{r} \geq .62$ occurring by chance = .01.

There can be no question that the variables involved in our study are remarkably stable. In the cases of WISC IQ, WISC Performance, WISC Verbal, the Purdue Pegboard, the Vineland Social Maturity Scale, Production and Self-Concept, the stability coefficients approach the known or estimated reliability of that instrument. Thus, should we choose, as did Bloom, to correct such stability coefficients for attenuation due to unreliability, we would find a number of them approaching unity. The message conveyed by these data is simple and direct. Although major changes in personnel occurred among years, often necessitating different testers and raters for these children at different times, and although these changes thus assured a good measure of independence of judgment between years, the performances of our subjects across the many measures of this study were remarkably, even depressingly from a rehabilitation standpoint, stable. From these correlations alone, it would seem highly unlikely that differential growth for the experimental and control groups will be discerned in the next stage of the analysis. These stability coefficients seem to suggest that we are in a position of attempting to introduce modifications into the growth of characteristics that are already matured far beyond our capacity to change them. It is analogous to attempting to change the height of twenty-year-old men by changing their diets. The twenty-year-old's height can no longer be changed, for his epiphyses have fused and height growth is no longer possible. With respect to vocational development, it appears that we may be dealing, even by age 14, with fusion of the vocational epiphyses.

Changes in Scores: Comparing Groups

Tables 6-8 summarize the mean scores and standard deviations for all subjects over the three diagnostic assessments and report the comparisons of experimental and control groups on the basic status variables. They are divided into four groups. These are the two experimental groups, old and new, as well as the two control groups, old and new. Comparisons were made between experimental and control groups within years instead of in a complex 2 x 2 x 3 factorial analysis of variance with years as one of the factors because we were primarily concerned with whether the experimental groups had become significantly superior to the control groups over the years, rather than whether significant changes over time had taken place within groups per se. Also, the complex analysis of variance would introduce many computational problems due to unequal sample sizes within the cells of the repeated measures design.

For each annual comparison the value of the F statistic with appropriate degrees of freedom has been calculated. The value of F reflects the likelihood that the two means have been drawn from the same population. The exact probability level associated with each value of F is printed directly below it. Since F is equal to t^2, these probability levels can be interpreted exactly as one would a t-test for the difference between two means. As was reflected in the stability coefficients, when change occurs it is observed rather uniformily across experimental and control groups.

Briefly, the major question is whether all of these changes would have occurred without the presence of any treatment and research program, or whether the changes are a function of the participation of all subjects in some aspect of the project, be they experimental or control. The

TABLE 6

COMPARISON OF MEAN SCORES ON WISC IQ, WISC PERFORMANCE AND WISC VERBAL FOR EXPERIMENTAL AND CONTROL GROUPS OVER THREE YEARS OF STUDY

	Year I	Year II	Year III
WISC IQ			
Old Exp.			
Mean	62.87	70.38	74.88
S.D.	9.01	10.90	8.59
Old Cont.			
Mean	63.56	66.81	74.58
S.D.	8.72	9.33	10.78
F	.05	.70	.00
p	.825	.413	.950
New Exp.			
Mean	65.92	69.40	70.67
S.D.	12.19	15.23	16.27
New Cont.			
Mean	70.30	76.00	78.00
S.D.	11.50	13.27	12.81
F	.74	1.07	1.20
p	.399	.315	.288
WISC Performance			
Old Exp.			
Mean	26.53	37.25	36.63
S.D.	9.14	9.82	10.46
Old Cont.			
Mean	25.28	32.25	35.50
S.D.	10.48	10.69	13.41
F	.13	1.23	.04
p	.719	.280	.844
New Exp.			
Mean	32.58	33.50	35.75
S.D.	13.43	14.44	15.40
New Cont.			
Mean	36.40	39.10	45.00
S.D.	11.53	11.33	8.60
F	.50	.93	2.20
p	.488	.347	.160
WISC Verbal			
Old Exp.			
Mean	22.73	25.13	28.63
S.D.	5.76	6.56	4.44
Old Cont.			
Mean	24.94	26.38	29.33
S.D.	5.43	6.05	6.37
F	1.28	.22	.07
p	.266	.647	.788
New Exp.			
Mean	21.58	23.30	26.75
S.D.	6.47	7.73	8.31
New Cont.			
Mean	24.10	28.00	27.38
S.D.	6.17	8.03	9.71
F	.86	1.78	.02
p	.365	.199	.892

TABLE 7

COMPARISON OF MEAN SCORES ON PRODUCTION, RATINGS VINELAND AND PURDUE FOR EXPERIMENTAL AND CONTROL GROUPS OVER THREE YEARS OF STUDY

	Year I	Year II	Year III
Production			
Old Exp.			
Mean	47.27	47.38	70.63
S.D.	9.91	11.11	9.27
Old Cont.			
Mean	44.50	41.63	69.00
S.D.	14.91	12.32	22.57
F	.38	1.23	.04
p	.544	.278	.850
New Exp.			
Mean	42.92	66.60	56.38
S.D.	12.29	20.67	10.89
New Cont.			
Mean	54.00	69.90	63.25
S.D.	9.70	11.59	10.19
F	5.35	.19	1.70
p	.032	.665	.213
Ratings			
Old Exp.			
Mean	126.00	96.00	103.00
S.D.	25.77	20.34	17.80
Old Cont.			
Mean	105.11	104.31	105.33
S.D.	38.40	31.93	27.71
F	3.22	.45	.04
p	.082	.511	.836
New Exp.			
Mean	104.33	110.50	97.38
S.D.	28.20	27.92	20.59
New Cont.			
Mean	97.70	105.10	100.00
S.D.	14.94	20.97	16.03
F	.45	.24	.08
p	.512	.631	.780

TABLE 7 CONT'D

COMPARISON OF MEAN SCORES ON PRODUCTION, RATINGS, VINELAND AND PURDUE FOR EXPERIMENTAL AND CONTROL GROUP OVER THREE YEARS OF STUDY

	Year I	Year II	Year III
Vineland			
Old Exp.			
Mean	80.90	86.17	85.38
S.D.	4.27	3.71	4.86
Old Cont.			
Mean	81.08	85.50	85.04
S.D.	3.59	3.87	3.06
F	.02	.18	.04
p	.894	.679	.852
New Exp.			
Mean	83.17	84.80	86.17
S.D.	4.71	3.14	1.84
New Cont.			
Mean	83.35	84.00	86.00
S.D.	3.50	2.55	2.84
F	.01	.39	.02
p	.920	.539	.886
Purdue			
Old Exp.			
Mean	202.53	213.75	234.50
S.D.	20.95	29.88	22.22
Old Cont.			
Mean	199.11	211.56	210.50
S.D.	52.65	59.29	62.17
F	.06	.01	1.08
p	.815	.923	.312
New Exp.			
Mean	183.00	206.60	224.50
S.D.	44.94	46.25	35.00
New Cont.			
Mean	206.40	211.30	225.13
S.D.	28.02	24.56	33.22
F	2.04	.08	.00
p	.169	.780	.971

TABLE 8

COMPARISON OF MEAN SCORES ON SELF-CONCEPT, LEVEL OF ASPIRATION AND DRAWINGS FOR EXPERIMENTAL AND CONTROL GROUPS OVER THREE YEARS OF STUDY

	Year I	Year II	Year III
Self-Concept			
Old Exp.			
Mean	102.47	98.50	111.38
S.D.	20.27	12.97	17.89
Old Cont.			
Mean	110.94	107.25	109.08
S.D.	20.12	23.67	23.80
F	1.44	.94	.05
p	.239	.343	.820
New Exp.			
Mean	105.75	104.20	105.70
S.D.	18.59	16.75	16.67
New Cont.			
Mean	99.00	107.70	104.70
S.D.	15.13	14.18	19.58
F	.85	.25	.02
p	.368	.620	.904
Level of Asp.			
Old Exp.			
Mean	.85	1.16	1.12
S.D.	.36	.25	.19
Old Cont.			
Mean	.97	1.06	1.35
S.D.	.30	.57	.77
F	1.17	.20	.70
p	.287	.660	.415
New Exp.			
Mean	1.34	1.34	1.02
S.D.	.47	.34	.22
New Cont.			
Mean	.92	.99	.97
S.D.	.22	.36	.13
F	6.48	5.03	.33
p	.020	.038	.575
Drawings			
Old Exp.			
Mean	30.10	33.38	33.38
S.D.	11.45	5.04	7.56
Old Cont.			
Mean	39.25	38.20	37.75
S.D.	7.37	7.88	7.26
F	6.20	2.44	1.69
p	.020	.133	.210
New Exp.			
Mean	27.30	34.40	37.00
S.D.	11.75	8.06	9.59
New Cont.			
Mean	34.90	31.10	37.30
S.D.	10.71	9.94	10.66
F	2.29	.67	.00
p	.148	.425	.950

CHANGES IN SCORES ON BASIC STATUS VARIABLES FOR EXPERIMENTAL AND CONTROL GROUPS OVER THREE YEARS

Figure 3

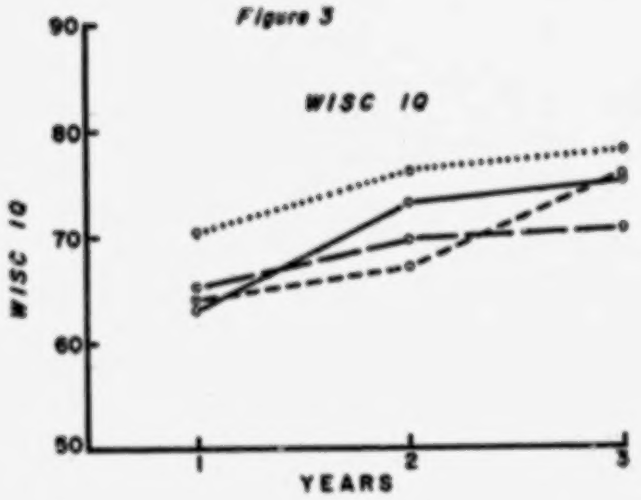


Figure 4

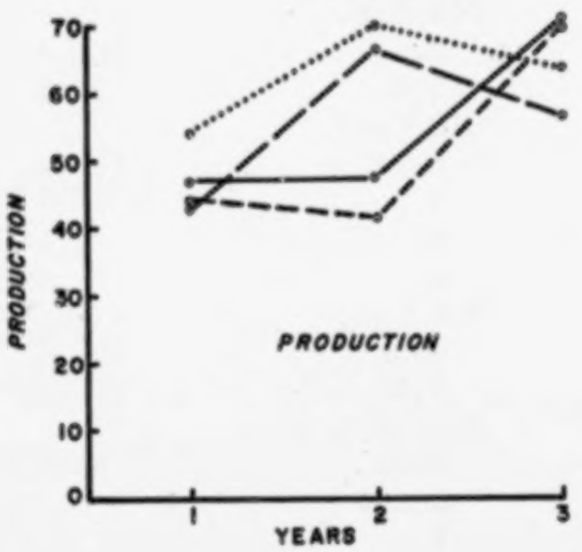


Figure 5

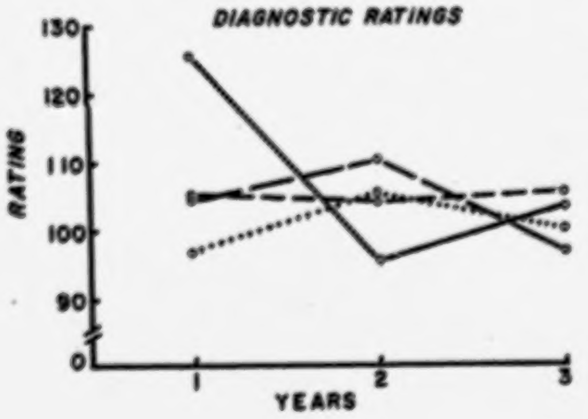


Figure 6

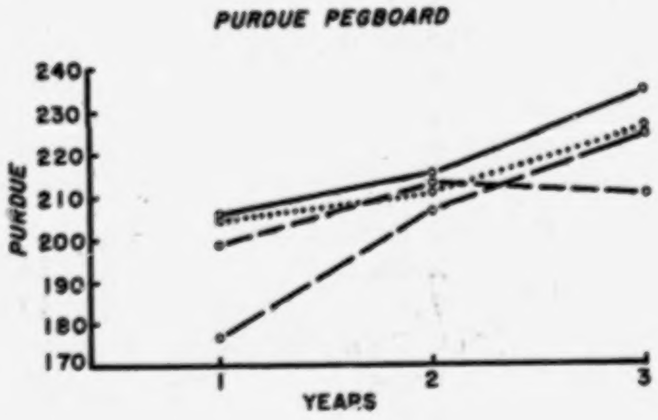


Figure 7

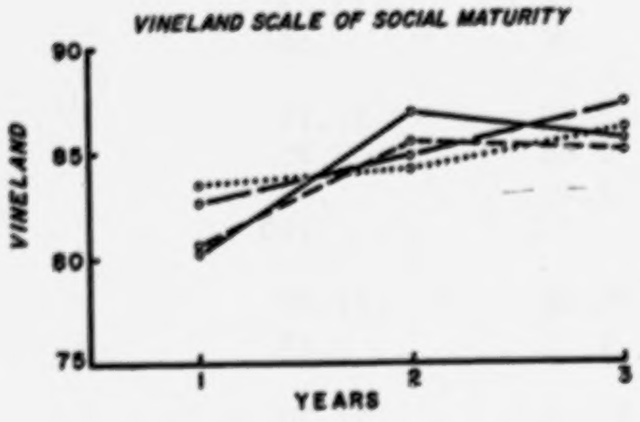
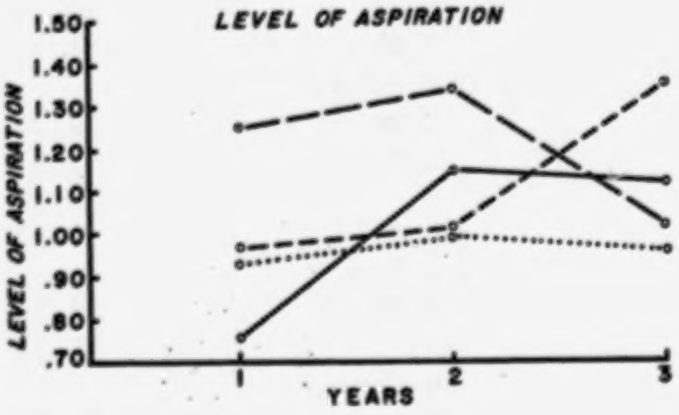


Figure 8



——— OLD EXPERIMENTAL GROUP
– – – OLD CONTROL GROUP
—— —— NEW EXPERIMENTAL GROUP
·········· NEW CONTROL GROUP

program could have operated as a stimulus to development, even for the members of the control group. Although the control subjects were not the recipients of purposeful direct treatment, they did receive a great deal of attention during each annual diagnostic period. Alternatively, the growth in these variables may be nothing more than a combination of normal maturation, statistical regression, practice effect and a short-term novelty effect. We shall discuss all of these alternatives in greater detail at the end of this chapter.

Figures 3 through 8 illustrate graphically the changes reported in the above tables. It can be seen that in some variables, such as the Vineland and level of aspiration, there appear to be greater gains made by the experimental group in the first year which, however, are not maintained by the end of the study. Such an initial, though quickly diminishing, experimental group advantage is not unique to our study. Similar findings have been reported by Kirk (1958) and Goldstein, Moss and Jordan (1965). Some possible explanations for these findings will be discussed at the end of this chapter.

In summary, we have no evidence for greater growth on the part of experimental group over control group subjects. There appear to be no replicable differences between groups.

Intercorrelations Among the Variables

We shall now turn to the intercorrelations among the basic status variables. We approach these correlations with a number of questions in mind. Is there a clear pattern of relationships among the variables?

TABLE 9

MATRIX OF INTERCORRELATIONS AMONG BASIC STATUS VARIABLES FOR COMBINED GROUPS (N = 55), YEAR I[a]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ										
WISC Perf.	.91									
WISC Verbal	.67	.35								
Vineland	.31	.27	.24							
Production	.58	.53	.37	.41						
Purdue	.56	.50	.42	.38	.64					
Self-Concept	-.07	-.16	.18	.10	-.09	-.19				
Ratings	.34	.33	.31	.43	.27	.24	-.06			
Level of Asp.	-.01	-.05	.03	.13	-.20	-.36	.33	-.24		
Drawings	-.04	-.11	.06	-.17	.08	.02	.04	-.12	-.14	

[a] For N = 55, the probability of $\underline{r} \geq .26$ occurring by chance = .05; the probability of $\underline{r} \geq .34$ occurring by chance = .01. (two-tailed)

TABLE 10

MATRIX OF INTERCORRELATIONS AMONG BASIC STATUS VARIABLES FOR OLD (N = 33) AND NEW (N = 22) GROUPS[a], YEAR I[b]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ		.90	.64	.23	.65	.48	.08	.12	.14	.31
WISC Perf.	.93		.30	.11	.57	.43	-.15	.11	-.06	.11
WISC Verbal	.79	.53		.35	.43	.33	.30	.26	.24	.30
Vineland	.29	.29	.19		.43	.48	.24	.40	.18	.03
Production	.50	.50	.32	.36		.67	.10	.10	.00	.12
Purdue	.75	.75	.54	.35	.61		-.10	.07	-.25	.14
Self-Concept	-.21	-.28	.03	-.04	-.42	-.39		.00	.42	.10
Ratings	.68	.61	.55	.43	.65	.77	-.13		-.21	-.10
Level of Asp.	-.28	-.26	-.14	-.08	-.55	-.48	.37	-.53		.21
Drawings	-.13	-.08	-.16	.19	.15	-.17	-.10	-.09	-.27	

[a] Old Group above diagonal--New Group below diagonal

[b] For N = 33, the probability of $\underline{r} \geq .35$ occurring by chance = .05; the probability of $\underline{r} \geq .45$ occurring by chance = .01. For N = 22, the probability of $\underline{r} \geq .42$ occurring by chance = .05; the probability of $\underline{r} \geq .54$ occurring by chance = .01. (two-tailed)

Do certain variables consistently covary with each other? Are these relations replicated over the years of the study, or do they change over time?

Table 9 reports the intercorrelations among the basic status variables for the first year of participation in the project of all 55 subjects who began the program, whether in experimental or control group status. Since these subjects were all randomly drawn from the same pool of EMH youngsters, we can view this intercorrelation matrix as reflecting the interrelationships among a set of psychological and vocational variables for a random sample of 14-year-old EMH adolescents. Intelligence, production, manual dexterity, ratings of general work behavior, and to a more moderate extent, social maturity, seem to covary with each other systematically and positively. We might call this group of variables the "competence group"[1]. This sample of EMH adolescents seems to be composed of individuals who tend either to be generally competent or generally incompetent. That is, were we to pick some arbitrary individual whose measured intelligence quotient is high for this sample, we would expect him also to be relatively mature socially as measured by the Vineland, to produce well in the workshop, to be manually dexterous and to comport himself in a manner appropriate to the worker role while in the shop.

In rather striking contrast, this group of variables is, if anything, correlated negatively with two measures of self-concept, the Self-Concept Scale and the level of aspiration ratio. These two, in turn, seem to be positively correlated with each other.

---

[1] This reference to the concept of "competence" as well as the many that follow, reflect the pervasive influence upon us of the work of White (1960).

We also find that the Verbal and Performance Scales of the Wechsler Intelligence Scale for Children do not contribute equally to the variance in the total WISC IQ scores. It would appear that the Performance Scale contributes substantially more variance than does its Verbal counterpart. Scanning further, it appears that the Performance Scale correlates more highly with each of the other status variables in the matrix than does the Verbal Scale. Finally, the Performance and Verbal Scales of the WISC correlate with each other only .35 for this sample. For a normal sample reflecting the entire range of intelligence test scores, that correlation is much higher. Chapter VI reports an intensive analysis of the measurement of intelligence for the samples in the present study.

When we examined the scores of subjects in the old and new experimental groups as reflected in Tables 6-8 and Figures 3-8, it was apparent that the groups that entered the program in the same year were generally more similar to each other than were the two experimental or two control groups which entered in succeeding years. Since a new pool of subjects from which random assignments were made was set up each year, it was not surprising that two groups drawn within the same year were most similar. It was for this reason that further correlation analyses were made by breaking down the groups into old and new rather than into combined experimentals and combined controls.

Table 10 presents the intercorrelations among the same variables for the first year within the now separated old and new groups. Examination of this table generally corroborates the values reported in Table 9. Although the specific values may often vary rather widely, this is no doubt due to differences in some of the characteristics of the sample and the effect of smaller sample sizes. Any attempt to enter such matrices and make detailed inferences from specific differences between correlations carries with it far too many untoward assumptions for any reasonable exercise. These data will therefore be presented without further discussion.

Tables 11 through 14 report parallel correlation matrices for the same groups for the second and final years of the service program. We shall at this point comment only on Table 14, the third intercorrelation matrix for the combined groups, whose sample size has now dropped from the 55 to 36. If there is one striking observation to be made, it is that the relationships described during the first year have, if anything, strengthened. This is in spite of the effects of attrition, which usually works to decrease the extent of relationships. Although the correlation between Performance and Verbal Scales of the WISC has remained almost identical to that of the first year, the difference between the effectiveness of the two scales in correlating with other variables has become greater. The Performance Scale is now clearly working more effectively than the Verbal Scale, and it is almost as effective as the total IQ score. The correlations among the general competence group, to which we referred earlier, and the self-concept group, have now become more marked as well. Self-concept and level of aspiration, though barely correlated with each other, each correlate in a generally negative direction with the other variables. We shall discuss the implications of this in the final section of this chapter as well as in the specific chapters later in the report devoted

TABLE 11

MATRIX OF INTERCORRELATIONS AMONG BASIC STATUS VARIABLES FOR COMBINED GROUPS (N = 44), YEAR II[a]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ										
WISC Perf.	.92									
WISC Verbal	.82	.60								
Vineland	.32	.32	.32							
Production	.47	.43	.28	.27						
Purdue	.42	.48	.32	.56	.49					
Self-Concept	-.07	-.26	.17	.03	-.02	-.04				
Ratings	.31	.19	.49	.43	.41	.41	.27			
Level of Asp.	-.22	-.25	-.17	-.23	-.18	-.51	.22	-.37		
Drawings	-.04	-.01	-.04	-.17	-.27	.06	.10	-.06	-.19	

[a] For N = 44, the probability of $\underline{r} \geq .31$ occurring by chance = .05; the probability of $\underline{r} \geq .40$ occurring by chance = .01. (two-tailed)

TABLE 12

MATRIX OF INTERCORRELATIONS AMONG BASIC STATUS VARIABLES FOR OLD (N = 24) AND NEW (N = 20) GROUPS[a], YEAR II[b]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ		.89	.68	.37	.54	.40	-.16	.36	-.34	.02
WISC Perf.	.95		.29	.30	.52	.41	-.38	.13	-.37	.00
WISC Verbal	.94	.83		.32	.31	.24	.25	.56	-.15	.00
Vineland	.42	.45	.35		.69	.66	.04	.56	-.36	-.27
Production	.42	.46	.46	.43		.73	.12	.58	-.38	-.10
Purdue	.53	.62	.46	.32	.71		.02	.30	-.53	-.03
Self-Concept	.01	-.13	.09	.03	-.30	-.18		.46	.31	.19
Ratings	.36	.31	.44	.15	.76	.64	-.06		-.32	-.19
Level of Asp.	-.17	-.14	-.19	.08	-.30	-.49	.02	-.43		-.05
Drawings	.01	.03	-.07	-.18	-.19	.16	.02	.01	-.33	

[a] Old Group above diagonal--New Group below diagonal.

[b] For N = 24, the probability of $\underline{r} \geq .40$ occurring by chance = .05; the probability of $\underline{r} \geq .52$ occurring by chance = .01. For N = 20, the probability of $\underline{r} \geq .44$ occurring by chance = .05; the probability of $\underline{r} \geq .56$ occurring by chance = .05. (two-tailed)

TABLE 13

MATRIX OF INTERCORRELATIONS AMONG BASIC STATUS VARIABLES FOR COMBINED GROUPS (N = 36), YEAR III[a]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ										
WISC Perf.	.91									
WISC Verbal	.68	.32								
Vineland	.31	.26	.25							
Production	.50	.50	.26	.45						
Purdue	.55	.55	.29	.44	.74					
Self-Concept	-.30	-.35	.11	-.05	-.09	-.17				
Ratings	.37	.29	.33	.29	.44	.38	-.09			
Level of Asp.	-.25	-.28	-.07	-.22	-.29	-.34	.19	-.47		
Drawings	.22	.16	.09	.08	.10	.22	-.23	.17	.01	

[a] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (two-tailed)

TABLE 14

MATRIX OF INTERCORRELATIONS AMONG BASIC STATUS VARIABLES FOR OLD (N = 20) AND NEW (N = 16) GROUPS[a], YEAR III[b]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ		.91	.45	.55	.74	.54	-.22	.28	-.40	.02
WISC Perf.	.94		.05	.38	.70	.55	-.33	.14	-.31	-.02
WISC Verbal	.84	.60		.53	.26	.10	.17	.36	-.29	.14
Vineland	.01	.00	.01		.59	.57	.02	.33	-.24	.26
Production	.43	.45	.26	.31		.82	-.08	.51	-.42	.12
Purdue	.66	.58	.60	.02	.73		-.15	.29	-.37	.18
Self-Concept	-.39	-.34	.01	-.13	-.36	-.20		.23	.18	.00
Ratings	.51	.49	.40	.11	.53	.61	-.67		-.55	.14
Level of Asp.	.00	-.17	.26	.16	-.39	-.24	.04	-.05		.19
Drawings	.32	.32	.07	-.20	.15	.31	-.45	.22	-.45	

[a] Old Group above diagonal--New Group below diagonal.

[b] For N = 20, the probability of $\underline{r} \geq .44$ occurring by chance = .01; the probability of $\underline{r} \geq .56$ occurring by chance = .01. For N = 16, the probability of $\underline{r} \geq .50$ occurring by chance = .01; the probability of $\underline{r} \geq .62$ occurring by chance = .05. (two-tailed)

specifically to analysis and discussion of the level of aspiration and self-concept variables.

An Index of Employability

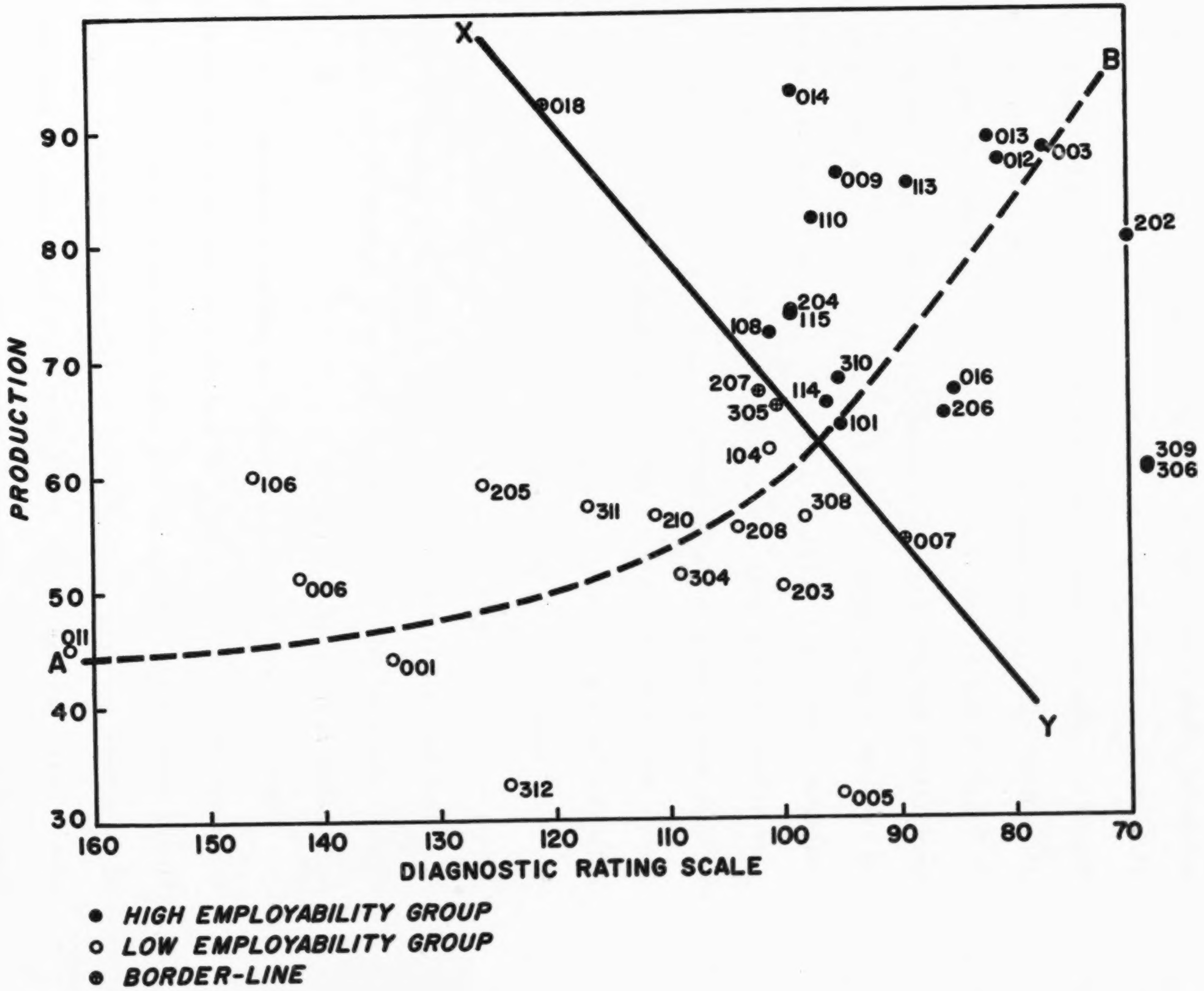
The overriding purpose of this research was to describe the process of vocational development and to analyze the manner in which other variables contribute to or hinder such development. The first requirement for such an analysis is the identification of some measure of employability. In the present study we have such a measure at different levels. First, we believe that the two variables most closely related to employability per se are the measures of production and the diagnostic ratings for each subject. The measure of production reflects how quickly and effectively the worker accomplished his appointed task. The diagnostic rating scale reports the evaluation made by a foreman of the appropriateness of the worker's behaviors on the job. Items dealing directly with the magnitude of production were purposely left out of the diagnostic rating scale in order to keep these two sources of vocational evaluation as independent as possible. It was not possible, however, to keep those who completed the ratings naive concerning the actual productions of the workers, nor is it likely that it should have been necessary. The correlations between production and ratings of .27 during the first, and .41 during the second year testify amply to the relative independence of the two measures since their respeccive reliabilities were substantially higher. Thus, these two measures, viewed individually, serve as two indices of the vocational maturity of any given subject.

A second means of assessing the vocational development of our subjects takes these same two variables, production and ratings, and views them as a means of making qualitative categorizations of our subjects. Figure 9 shows the scatterplot for the relationship between diagnostic ratings and production for the entire remaining sample of 36 subjects during the third-year diagnostic period. Although the correlation between these two variables was then only a moderate .44, it is clear that a fairly clean dichotomization of the sample is quite possible. Drawing a straight line, XY, diagonally across the scatterplot allows us to divide our 36 subjects into 18 who are high in both ratings and production, whom we shall call the high employability group, and 14 who are low in both these characteristics, whom we shall call the low employability group. It is quite striking to note that the four subjects whom we cannot categorize cleanly into either of these two distinct groups fall exactly on the diagonal we have drawn, XY. The four subjects, 007, 018, 207 and 305 will generally not be used in any analysis which compares the more employable to the less employable members of our sample.

There are good reasons, however, to prefer a continuous variable for a criterion in this study, in addition to the described dichotomy. First, when one is dealing with a relatively small sample, the loss of even four subjects can result in a distressing decrease in statistical power. Also, a more useful prediction technique, such as multiple regression, requires a continuous rather than a dichotomous variable as a criterion. In order to translate employability into a single score or index which would be distributed rather smoothly

Figure 9

SCATTERPLOT OF DIAGNOSTIC RATINGS AND PRODUCTION FOR COMBINED GROUPS, YEAR III



across the entire sample, we converted the third-year production and diagnostic rating scores for our subjects into standard scores with a mean of 50 and a standard deviation of 10 respectively. We then summed the standard scores for each subject across his production and ratings to arrive at a summation score which we called his employability index or employability score. The advantage of such a summation is that in combining two moderately correlated indices of the criterion behavior, we are likely to arrive at a more reliable single index than either of the two might have been individually. The disadvantage of such a summation is a function of statistical regression. When two moderately correlated variables are summed statistically, the resulting score has a much tighter distribution than either of the two scores contributing to it. This is due to the simple fact that when these two variables are correlated in a moderate, positive direction, an individual who is very high on one is unlikely to be proportionally as high on the other. The same is true for individuals who are extremely low. Hence, the resulting distribution tends to be somewhat more crowded around the middle than either of the two contributing distributions. It is generally hoped in such a case that, though less discriminating in the sense of being spread out, the resulting distribution gains more through increased reliability than it loses through lower spread.

The employability index had a mean of 100.7 with a standard deviation of 17.1. Scores ranged from 59.5 to 125.22. Examination of the scatterplot of ratings and production, Figure 9, suggests the reason why the correlation between these two variables was only a moderate .44, even though the dichotomy between these two groups can be made so cleanly. It can be readily ascertained that the best-fit line describing the relationship between these two variables is not straight but curved. An attempt to draw such a line is made with the dotted curve AB which has been drawn through the scatterplot. We would guess that the reason for this curvilinear relationship has less to do with some underlying characteristic of vocational development than it does with the likelihood that the rating scale had "low ceiling." That is, the style of the raters using the scale was such that they found the scale far more useful to describe degrees of inferiority among poor workers than they did to discriminate degrees of excellence among good workers.

An additional measure of employability used in this study will only be dealt with in Chapter XIII, the Epilogue. Through a series of fortunate circumstances, it was possible during the summer of 1967 to engage the individual who had been the supervisor of the service portion of the project to attempt a telephone follow-up of all the subjects who had participated in the study. Because the writing of the final report was already well underway, it was impossible to include this final follow-up in the body of the text. It was expected that no more than one half to two-thirds of the originally participating sample would be accessible by phone. Yet, this opportunity to test, even in the most meager manner, our simulated indices of employability against the actual life outcomes of these subjects as they approached the end of their second decade, was irresistible. Thus, the Epilogue chapter will deal with the results of this final follow-up and will hopefully allow us to comment, if only very tentatively, on the validity of our criterion measures.

We will now report a series of analyses in which either the employability dichotomy or the employability index was used to answer the following question: What are the ways in which the high employability and low employability EMH adolescents differ? In what ways do they differ at the conclusion of this study, when that distinction is made, and in what ways were they already distinguishable at the very inception of the study? In order to answer these questions, we will examine the differences between the mean scores of the high and low employability groups for the major status variables in this study both at the inception and at the end of their participating years in the program. We will also examine the correlations between the employability index and these other variables. We will then describe the multiple regression analysis conducted in order to identify the combination of first year variables which best predicts the third year employability of our subjects. Finally, we will present a factor analysis of the basic status variables and employability in order to confirm our earlier generalizations about the manner in which these variables cluster for this sample.

Differences Between Subjects High and Low in Employability

Table 15 reports the means and standard deviations of the high and low employability groups for the eleven basic status variables used in this research, both at the beginning of the first year of the study and during the third. It will be noted that, both at the beginning and end of the study, these two groups are clearly distinguishable on those variables which we earlier identified as making

TABLE 15

COMPARISONS OF HIGH AND LOW EMPLOYABILITY GROUPS ON BASIC STATUS VARIABLES FOR YEARS I AND III

	Year I	Year III
Drawings		
High		
Mean	33.22	36.39
S.D.	11.44	10.16
Low		
Mean	32.50	36.07
S.D.	11.38	7.75
F	.03	.01
p	.86	.92
Self Concept		
High		
Mean	103.22	107.50
S.D.	14.87	19.68
Low		
Mean	104.00	106.93
S.D.	20.94	21.98
F	.01	.01
p	.90	.94
Level of Asp.		
High		
Mean	.954	1.101
S.D.	.266	.151
Low		
Mean	1.118	1.286
S.D.	.539	.73
F	5.35	4.69
p	<.01	<.01
Purdue		
High		
Mean	224.33	244.28
S.D.	20.08	16.13
Low		
Mean	167.64	191.00
S.D.	52.65	51.18
F	17.70	17.43
p	<.0005	<.0005

TABLE 15 CONT'D

COMPARISONS OF HIGH AND LOW EMPLOYABILITY GROUPS ON BASIC STATUS VARIABLES FOR YEARS I AND III

	Year I	Year III
Vineland		
High		
Mean	83.67	87.14
S.D.	3.71	2.44
Low		
Mean	79.43	83.93
S.D.	3.19	3.58
F	11.60	9.09
p	.002	.005
WISC IQ		
High		
Mean	70.33	80.72
S.D.	8.53	9.62
Low		
Mean	63.07	70.43
S.D.	12.42	11.28
F	3.84	7.76
p	.059	.009
WISC Verbal		
High		
Mean	25.78	30.72
S.D.	4.78	5.42
Low		
Mean	21.07	25.86
S.D.	6.94	8.13
F	5.15	4.11
p	.031	.051
WISC Perf.		
High		
Mean	34.11	42.56
S.D.	10.41	11.19
Low		
Mean	28.71	33.50
S.D.	13.29	11.79
F	1.66	4.92
p	.21	.034

TABLE 15 CONT'D

COMPARISONS OF HIGH AND LOW EMPLOYABILITY GROUPS ON BASIC STATUS VARIABLES FOR YEARS I AND III

	Year I	Year III
Chicago IQ		
High		
Mean	68.94	
S.D.	6.54	
Low		
Mean	65.71	
S.D.	6.85	
F	1.84	
p	.185	
Production		
High		
Mean	55.17	75.56
S.D.	11.89	10.84
Low		
Mean	38.64	50.78
S.D.	10.35	9.36
F	16.98	46.21
p	<.0005	<.0005
Ratings		
High		
Mean	98.78	88.00
S.D.	22.74	11.11
Low		
Mean	112.57	119.28
S.D.	39.80	20.48
F	1.53	30.62
p	.23	.0005

up our general competence cluster, viz., IQ, Purdue, Vineland, Ratings and Production. The variable called "Chicago IQ" is the score received by each subject on his most recent intelligence test administered by the Chicago schools' Bureau of Child Study. This test was generally a Stanford-Binet administered within two years of the beginning of the present study. As we have seen before, the measures of self-concept, drawings and level of aspiration were not related to employability. In fact, level of aspiration is significantly higher for the low employability group than for the high employability group.

Table 16 reports the product-moment correlations between the employability index and eleven basic status variables for each year of the study.

TABLE 16

TOTAL GROUP CORRELATIONS WITH THIRD YEAR EMPLOYABILITY INDEX (N = 36)[a]

	Year I	Year II	Year III
Drawings	.15	-.10	.16
Self-Concept	-.07	.08	-.10
Level of Asp.	-.33	-.63	-.44
Purdue	.70	.69	.66
Vineland	.46	.56	.44
WISC IQ	.42	.41	.52
WISC Verbal	.47	.44	.35
WISC Perf.	.31	.36	.46
Chicago IQ	.24	----	----
Production	.66	.47	.85
Ratings	.27	.76	.84

[a] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (two-tailed)

In general, these values confirm the positive relations between the competence cluster and employability on the one hand, and the lack of or negative correlations with self-concept-relevant variables. Quite striking is the magnitude of the correlation between the Purdue Pegboard and employability. Since the Ratings and Production measures were used to derive the Employability Index, those correlations are necessarily high. Detailed analyses of the self-concept measures will be conducted in later chapters of this report.

The Prediction of Employability

In order to identify the pattern of first year variables which could, in combination effect the best prediction of third year employability for the entire sample, a step-wise deletion multiple regression analysis was calculated for ten first-year scores with third-year employability as the criterion.

TABLE 17

MULTIPLE REGRESSION ANALYSIS FOR PREDICTION OF EMPLOYABILITY IN THIRD YEAR USING TEN FIRST YEAR VARIABLES AS PREDICTORS (N = 36) WITH VARIABLES LISTED IN THE ORDER IN WHICH THEY WERE DELETED

Variable	R^2 Before Deletion
WISC Verbal	.58
Aspiration Index	.58
Chicago IQ	.58
WISC IQ	.58
WISC Perf.	.57
Level of Asp.	.56
Self-Concept	.55
Drawings	.54
Vineland	.51
Purdue	.48

Table 17 reports the results of that analysis. In a step-wise deletion multiple regression, the best multiple-correlation between all predictors and the criterion is first computed. In this case, the multiple correlation was .76, accounting for 58% of the total variance in employability. The analysis then deletes one predictor variable at a time, in an increasing order of their contribution to the prediction. The amount of variance accounted for at each step is represented by R^2, the squared multiple correlation coefficient.

Examination of Table 17 testifies to the predictive power of the Purdue Pegboard for employability. The correlation of .70 between first-year Purdue and third-year Employability Index already accounts for over 48% of the variance in employability. The other nine variables in concert can only account for an additional 10%. The deletion of the first seven variables makes practically no difference in the total R^2. Only Drawings and the Vineland appear to make even the most meager contribution to the prediction made by the Purdue. We shall later examine the possible implications of the powerful predictive validity of this instrument.

Factor Analysis of Basic Status Scores

In an attempt to confirm the generalizations made earlier concerning the manner in which variables tended to cluster correlationally, factor analyses were carried out with each year's data using twelve basic scores for the thirty-six subjects remaining in the study for its entire duration.

Scores include the Aspiration Index, a derived level of aspiration score which will be discussed in detail in Chapter IX. Briefly, this index reflects the general level of optimism of a subject's aspiration patterns, irrespective of the magnitude of the goals set. The Interview

TABLE 18

FACTOR LOADINGS FOR TWELVE BASIC VARIABLES OVER THREE YEARS, COMBINED GROUPS (N = 36)

Variable	Year One Factor and % of Variance Accounted for			Year Two Factor and % of Variance Accounted for			Year Three Factor and % of Variance Accounted for		
	I (33)	II (16)	III (13)	I (33)	II (15)	III (17)	I (32)	II (14)	III (16)
Drawings	-.11	-.50	.23	.25	.44	-.23	.23	.28	.06
Self Concept	-.14	.16	.80	-.08	.80	.27	-.13	-.80	-.13
Interview	.12	-.04	.75	-.29	.75	-.19	.07	-.87	.14
Level of Asp.	-.24	.83	.22	.38	.01	.82	-.59	-.11	-.18
Aspiration Index	-.11	.83	.14	-.08	-.07	.80	-.10	.01	-.88
Production	.77	-.18	.09	-.68	-.38	-.07	.86	.04	-.07
Ratings	.57	-.04	-.22	-.71	.25	-.18	.62	.21	-.39
Purdue	.81	-.30	-.07	-.64	-.09	-.50	.83	.13	-.01
Vineland	.71	.25	-.21	-.65	-.04	-.21	.57	-.17	-.21
WISC IQ	.83	.07	.06	-.81	.04	.14	.58	.15	-.49
WISC Verbal	.75	.03	.35	-.77	.33	.24	.33	-.20	-.73
Employability	.73	-.30	-.02	-.77	.12	-.44	.87	.14	-.27

scores used in the factor analysis were based on the scoring of five items of the client interview which tapped his stated self-conception. Scores on WISC Performance and Chicago IQ were left out of the factor analysis because of their very high correlations with WISC IQ, which tended to distort the observed factor structure.

As summarized in Table 18, three rotated factors are generated by the Varimax solution for each year. They are essentially the same factors each year, accounting for approximately the same proportions of variance annually.

Factor I consistently accounts for 32-33% of the total variance and has all the elements of the earlier identified "competence cluster" loaded high on it. A second factor which replicates over all three years loads highly the two self-report measures of self-concept, Interviews and Self-Concept Scale. This factor, which is Factor II during the first year, and Factor III for years two and three, accounts for 13-15% of total variance.

The third factor loads the two related "performance" measures of self-concept, level of aspiration and the Aspiration Index, during the first two years. In Year III, a change takes place, with level of aspiration now having a high negative loading on the competence factor, and WISC Verbal joining the Aspiration Index on the third factor.

We thus see that by the third year, high levels of aspiration are associated with low competence, an observation already made tentatively, based on examination of the correlation matrices. The reason for WISC Verbal loading highly on the factor with the Aspiration Index remains puzzling. The Drawings score seems to flit about across factors, not loading consistently on any single one. It would appear that the

Drawings scores may be generally unreliable or, at least unrelated to the domains measured by most of the other variables in the study.

Those Who Left: The Attrition Group

Nineteen out of the original fifty-five subjects who began the program in 1962 and 1963 did not complete the diagnostic periods of 1964 and 1965 for the old and new groups respectively. One subject dropped out at the beginning of the second year of the program but returned at the beginning of the third year and thus was not included in the attrition group. The percentage of attrition was 34.5% which, though high, is not unpredictably so for a longitudinal study of this kind. In a parallel study of primary grade EMH youngsters by Goldstein, Moss and Jordan (1965), an attrition rate of 26.2% was observed. That the attrition rate for the present study should be higher is not surprising. Whereas in the Goldstein, Moss and Jordan study the children were all in the primary grades of public schools, and the investigation was conducted in the public schools, subjects in the present study were nearing school-leaving age, and the program itself was conducted independently of the public schools. The older age of the subjects in the present study made it more likely that they would be subject to attrition, due to competing activities and the likelihood of some subjects leaving school and getting jobs toward the end of the study. Table 19 reports those places where attrition occurred. It can be readily noted that the greatest proportion of the total attrition for this study occurred at the end of its first year. This is directly parallel to the reported attrition pattern for Goldstein, Moss and Jordan.

TABLE 19

PATTERNS OF ATTRITION BY COLOR AND SEX FOR EACH YEAR

		Year I Number and % Remaining		Year II Number and % Remaining		Year III Number and % Remaining	
		No.	%	No.	%	No.	%
White	Male	15	100	14	93	11	73
	Female	22	100	14	64	11	50
Negro	Male	9	100	9	100	8	89
	Female	9	100	7	78	6	67
Total		55	100	44	80	36	66

Examination of Table 19 makes it clear that the nature of the attrition was not uniform across sexes and races. The group in which attrition is greatest is that of the white females. These are followed by Negro females, white males and Negro males. What might account for this predominantly female attrition, with white females leading the way by a large margin? Two considerations suggest themselves.

First, the general setting in which the diagnostic periods and the treatment program conducted was a simulated factory. The work which the subjects did was probably perceived as being far more masculine than femine. It is not unlikely that the females could have reacted negatively to many of the jobs as well as the general setting while their male counterparts did not. Second, the white females who dropped out were almost entirely of lower-middle or upper-lower class. More than once, the mother or father of a white female subject would approach the the supervisor of the workshop and ask if it were possible for their daughter to receive training in such things as filing, typing, and other more socially desirable kinds of activities. They seemed to perceive the letter-shop, assembly, and small packaging tasks which were used in the shop as demeaning for their daughters. This attitude clearly was communicated to the clients themselves and was often reflected in their work behavior.

Finally, girls in our culture tend to worry about their vocational futures far less seriously than do boys. Marriage usually solves problems of vocation for girls, while dramatizing them for men. Therefore, we would expect smaller excuses to suffice in leading girls to drop out of the workshop, while not resulting in the same behavior on the part of the males. It may thus be speculated that a combination of perceived masculinity of the setting and middle-class discomfort with perceived lower class-appropriate tasks led to the pattern of attrition reflected in the present study.

The next major question which must be answered concerns the possible consequences for analysis of our research data of this differential attrition. Are there statistically significant differences in the first year data between the attrition group and those who remained? If there are, all subsequent data analyses must be interpreted with extreme caution. If there are not, then we can assume that the results for the group that remained are essentially similar to what they would have been had there been no attrition.

Table 20 reports the differences in the mean scores for the major general variables in the study between the attrition group and the group that remained. Examination of that table reveals that the groups are essentially identical with not a single statistically significant difference between them on any of the variables under consideration. We may thus proceed with subsequent analyses without fear that the nature of the attrition has markedly distorted the results of the study.

Discussion of Stability and Change

A number of observations may be made at this point in the analysis of the data. First, the major research hypothesis concerning superiority of the experimental over the control subjects is consistently disconfirmed. Examination of the differences between the mean scores for experimental and control group subjects across the important variables of the study yield no significant differences between the two groups. The experimental treatment may have failed for any number of reasons. We will discuss these in greater detail in Chapter XIV of this report. Suffice it to say at present that a combination of two factors probably worked against the success of the experimental treatment. First, the stability coefficients across the duration of the study for the combined groups are so high as to suggest that the characteristics which the experimental treatment proposed to modify were already so fully developed that serious modification was out of the question. In addition, it is possible that the experimental treatment used was not sufficiently powerful to affect major change in most of these subjects.

TABLE 20

COMPARISON OF ATTRITION GROUP (N = 19) WITH REMAINDER GROUP (N = 36) FOR FIRST YEAR OF STUDY

	Year I				
	Attrition	Remainder		Attrition	Remainder
WISC IQ			Purdue		
Mean	63.00	66.22	Mean	194.74	199.50
S.D.	8.80	10.86	S.D.	26.30	45.84
F	1.239		F	.174	
p	.271		p	.678	
WISC Perf.			Self-Concept		
Mean	26.53	30.66	Mean	110.63	102.53
S.D.	10.30	12.11	S.D.	19.15	18.64
F	1.604		F	2.306	
p	.211		p	.175	
WISC Verbal			Ratings		
Mean	23.47	23.44	Mean	112.26	107.72
S.D.	5.73	6.03	S.D.	26.88	32.95
F	.0003		F	.267	
p	.986		p	.608	
Vineland			Level of Asp.		
Mean	82.79	81.43	Mean	.98	.99
S.D.	4.09	4.04	S.D.	.34	.39
F	1.394		F	.018	
p	.243		p	.895	
Production			Drawings		
Mean	45.11	47.44	Mean	36.66	33.72
S.D.	10.16	13.66	S.D.	6.44	10.95
F	.430		F	.593	
p	.515		p	.445	
Chicago IQ					
Mean	67.84	67.25			
S.D.	6.41	6.75			
F	.099				
p	.754				

Even though no experimental-control group contrasts have been demonstrated by this research, a large number of fruitful questions can still be answered. First, it appeared that examination of the intercorrelation patterns among the variables revealed a set of characteristics which we called the "competence cluster." There was a general tendency for measured intelligence, production, diagnostic ratings, manual dexterity and, to a lesser extent social maturity, to covary systematically. This cluster was subsequently confirmed through a factor analysis.

When subjects were divided into high and low employability groups on the basis of third year data, all variables in the competence cluster distinguished between them, both at the very beginning and the conclusion of the study. A multiple regression analysis showed that the Purdue Pegboard in the first year was the best single predictor of third-year employability for the entire group. The other variables did not add significantly to the magnitude of the predictive correlation coefficient. As indicated above, the broader implications of these findings will form the focus for Chapter XIV of this report, the General Discussion.

CHAPTER V

RATINGS OF WORK BEHAVIOR

The purpose of the annual diagnostic assessment period was to observe and assess the behavior of each subject as he was confronted by the demands of the simulated work setting. A 26-item diagnostic rating scale was developed for use by the foremen in rating the behavior of each subject during the five day assessment period. The scale is reproduced in Appendix A.

Description of the Scale

The rating scale was composed of four general types of items reflecting the four major areas in which the vocational adequacy of each subject would be judged.

The first area concerned the personal characteristics of the subject. Items in this area included "appearance," and "odd or inappropriate behaviors." These were characteristics which could be observed under any conditions and were not contingent upon the specific nature of the task at which the client was working. Four of the scale items fell into this general category.

A second area concerned subject-task interaction. These items dealt with the characteristics manifested by the subject in the psychomotor aspects of his worker role. Such items included "organization of work method," and "rhythm and coordination." Eight of the scale items dealt with the subject-task domain.

A third domain was that of subject-peer interactions. Included in this category were items such as "amount of activity directed toward social contact" and "reactions to pressure originating in work group." Four of the scale items related to this category.

Finally, eight of the scale items dealt with the crucial area of subject-authority interactions. Such items included "inappropriate personalization of client's relationship with foreman" and "ability to accept criticism."

Two additional items completed the 26-item scale. The item "punctuality at arriving to work" had almost no variation and was not included in the scoring of the scale. There was also one general item, "acceptability of client's role as a worker," which did not appropriately fall into any one of the four above mentioned categories but seemed to cut across all of them.

Each child was rated by his foreman on each of the five days of the diagnostic period. A total score for each subject was calculated daily by adding together the scores received for each of the items on the scale. Whenever an item could not be scored because the foreman had been unable to observe the behaviors involved, scores on those items were prorated on the basis of the total score for the rest of the items in the scale for that day and a corrected total scale score was thus calculated. At the end of the five-day period the clients' five daily rating scale scores were averaged, resulting in his average diagnostic rating score for that assessment period. Since each item was rated on an 11-point scale, where 1 was the highest possible score and 11 the lowest, the total scale scores are to be interpreted like golf scores, with the lower scores showing greater vocational adaptability. In order to avoid confusion in the interpretation of correlational data, however, the signs of the correlations between ratings and other variables were consistently reversed so that low ratings (which are, vocationally speaking, high) were seen to correlate positively with high scores on other variables.

The inter-rater reliability of the total diagnostic rating score has consistently varied between .70 and .80.

Difficulties with the Rating Situation

The diagnostic rating scale was the chief judgmental instrument in use during the five-day assessment period. The data on production and level of aspiration were more clearly objective and non-judgmental. The raters using the scale were responsible for establishing the stage of vocational development of each subject as reflected in the degree to which his behavior approximated that which was appropriate for a mature worker. It had always been our hope that changes in scores on the diagnostic rating scales over the years of the study, in conjunction with changes in production and patterns of level of aspiration, would provide us with the clearest pictures of a developing vocational maturity. Two major problems hampered the usefulness of this scale, however, and clearly restricted its potential validity as an index of vocational development. The first was dubbed the "nebbish reaction," and the second was a ceiling effect.

During the first diagnostic assessment period of the summer of 1962, the old control group was in the diagnostic workshop. It was there that we first discovered and managed to combat the "nebbish reaction." In reviewing the rating scales as filled out by our raters over the first two days of the diagnostic assessment period, we observed some that seemed intuitively out of line. For example, one retarded girl had a withered left arm, which resulted in her performing the workshop tasks not only at a much slower rate than most of her peers but also with clear decrements in quality. Yet, on two consecutive days, her rater gave her the highest or second highest possible ratings on the items dealing with work quality, and rhythm and coordination. When the rater was asked to justify the rating given, she indicated that though she recognized the clearly inadequate work that the subject was doing, she felt she ought to "give her credit for trying so hard." This rater, who was as conscientious and well meaning as any other, was behaving in a manner which we found to be characteristic of some other raters as well. Most of those who worked as foremen in the shop came from backgrounds in the service aspects of special education or vocational guidance rather than the more research oriented disciplines. In keeping with the values of their service-oriented trainings, they often tempered their judgments with mercy. That is, they often confused their responsibility for making objective judgments of the quality of behaviors manifested by their assigned subjects with the kinds of feelings that surround one who is responsible for making value judgments concerning those subjects. We thus found quite frequently in those first few days of the first week's diagnostic period, that clearly inadequate workers who were able to evoke feelings of pity in their raters were often receiving far better ratings than some of their more competent peers who did not affect the rater's emotions in the same manner. This of course served to restrict the reliability and validity of the scale during that initial period. It was not until nearly the end of the first week that we were able to deal with the emotions of our raters adequately enough to restore the needed balance to their assessments.

We feel there is clearly a lesson to be learned from this experience. In similar situations, it is likely that the raters will come from backgrounds parallel to those of our own raters. This is inevitably the case when one conducts research in a service setting. We now recognize that considerable debriefing of both an objective and an emotional nature must be conducted with the raters before any actual work with the subjects begins. Raters must be led to discuss their feelings for the handicapped with each other and then recognize the distinction between making objective behavioral observations and rendering personal value judgments. The special education teacher and the vocational counselor can be trained to serve as highly reliable raters of behavior. This is reflected in the subsequent usefulness of rating scores in understanding the behavior of our subjects. However, considerable pretraining of the kind described above is clearly necessary.

The problem of ceiling effects was a more serious one of longer standing which was never wholly solved. We had instructed the raters to keep in mind the population of average industrial workers as their invisible reference group when using the scale. Thus, work behavior that would be typical of the average industrial worker would be rated 6 on the scale. Work behavior that was below that of the typical industrial worker would receive ratings from 7 through 11, while superior behavior would receive ratings from 5 up to 1. Whether because of personal inexperience with the industrial world of work, or through a more generalized and inevitable psychological judgment reaction, the raters were unable to maintain a stable reference group of the kind described. Instead, it became very clear that the functional reference group was the population of subjects participating in the present study. Hence, a rating of 6 may have reflected the judgment of the observer that the subject was more or less average _for this group_. Other ratings reflected that same anchor point. Clearly then, those workers who were initially better than average were already receiving ratings of 1 or 2 on many of the individual scales during the first year. Needless to say, this left little or no room for subsequent annual improvement. Figure 4 (p. 50) reflects this lack of change in the ratings. Possible strategies for combating such a problem of invisible reference groups are conceivable, but examination of them will be deferred until the General Discussion, Chapter XIV.

Stability and Relations with Other Variables

The effects of that first week's problems are reflected in the stability coefficients for the diagnostic rating scale (Tables 3-5, pp. 41-43). It will be recalled that, whereas the old group stability coefficient for Year I to Year II is only .41, for the new groups the parallel stability coefficient is .60. Furthermore, the stability coefficients for the old and new groups respectively between Years II and III are .81 and .72. Once the individual anomalies of the raters were straightened out, the reliabilities quickly rose, and, as can be seen, the year-to-year stability coefficients reached the level of the interrater reliability of the scale. An additional factor which suppressed the values of the stabilities of the Year I to Year III coefficients was the ceiling effect. As the behaviors observed improved, those who had initially scored poorly on the scale received better ratings, while their peers who had been superior earlier, though no doubt also improving, had already received ratings that were so high that little additional rise in their scale scores was possible. Thus, a restriction in range resulted which contributed to the lowering of the stability coefficients. This, no doubt, also contributed to the generally low to moderate correlations between the rating scale and other variables. This problem was also discussed in Chapter IV when we noted that an almost perfect dichotomous split could be made between those high on both production and ratings and those low on both, even though the correlation between them was only .44. We then attributed this to a possible ceiling effect in the rating scores.

As we examine the correlations between the other variables and the diagnostic ratings for each year in Table 21, we can see that a general pattern prevails. Ratings correlate in a generally positive

TABLE 21

CORRELATIONS BETWEEN DIAGNOSTIC RATINGS AND BASIC STATUS VARIABLES FOR ALL SUBJECTS

	(N = 55)[a] Year I	(N = 44)[b] Year II	(N = 36)[c] Year III
Drawings	-.12	-.06	.17
Level of Asp.	-.24	-.37	-.47
Aspiration Index	-.14	-.03	.32
Purdue	.24	.41	.38
Vineland	.43	.43	.29
WISC IQ	.34	.31	.37
WISC Verbal	.31	.49	.33
WISC Perf.	.33	.19	.29
Chicago IQ	.19	----	----
Production	.27	.41	.44
Self-Concept	-.06	.27	-.09
Employability	.27	.77	.85

[a] For N = 55, the probability of $\underline{r} \geq .26$ occurring by chance = .05; the probability of $\underline{r} \geq .34$ occurring by chance = .01. (two-tailed)

[b] For N = 44, the probability of $\underline{r} \geq .31$ occurring by chance = .05; the probability of $\underline{r} \geq .40$ occurring by chance = .01. (two-tailed)

[c] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (two-tailed)

direction with measures of intelligence, social maturity, production, and manual dexterity, while correlating at a zero level or negatively with measures of self-concept and level of aspiration ratio. It is notable that by the third year, while the ratings continue to correlate negatively with level of aspiration ratio, which reflects the magnitude of the levels of aspiration set by subjects, ratings correlate positively with the Aspiration Index, which reflects the degree to which aspirations were optimistic or realistic irrespective of their magnitude. It appears that highly rated subjects were those whose levels of aspiration tended to be optimistic, though moderately so. Extremely high level of aspiration ratios were more characteristic of poorly rated subjects. The level of aspiration findings will be discussed in detail in Chapter IX.

Factor Analysis of the Rating Scale

We had anticipated that it would be possible, through factor analysis, to identify relatively independent subscales within the total instrument from which we could then derive separate factor scores. This hope proved groundless. Analysis of the 1962 ratings yielded what appeared to be a promising set of five factors. An attempt to replicate these factors with the second-year's diagnostic data failed completely. The same failure greeted our attempts with the third-year data.

The problem was a simple one. For all diagnostic assessment periods subsequent to that first 1962 diagnostic, the intercorrelation matrix among the items of the rating scale was essentially singular. That is, although there were differences in the absolute value of the means for

for the different item subscales, the correlations among items were generally +.80 and above. Hence, the entire scale formed one large factor. There were two likely explanations. First, it was possible that, despite our attempts to sharpen the discriminations made by the raters, a general assessment of each client was being made by his respective foreman and the halo generated by this assessment was then casting its light upon the scoring of each of the scale items. A second possibility was that clients tended to be quite consistent across the areas reflected in the scale. It was not that the raters lacked in discrimination, but that the subjects tended to be rather uniform in their behaviors. This would be consonant with our earlier observations concerning the "competence cluster." In retrospect, we would guess that both of these possibilities were operating. The outcome in either case was the same. No analysis of the rating scale into factorially unique subscales was possible.

Characteristics of Individual Items

Despite the fact that we are unable to characterize independent subscales into which the total rating scale divides, we are able to make some comments about the manner in which certain of the individual items in the scale differ from each other. We shall comment upon them at two levels. First, although there is no significant change in the total score for the rating scale over the three measurement periods, certain of the item scores do undergo change. Two items change positively by more than one point over the course of the study. These are item number 6, "ability to comprehend instructions," and item number 20, "ability to communicate thoughts and feelings." All other items changed, if at all, by less than a point. Two of the items on this scale showed negative change, that is, the subjects seemed to rate less well at the end of the study on these items than they did at the beginning. These were, interestingly enough, the first and last items on the scale, "reaction to change in jobs" and "response to reinforcement." Since the changes in these item scores were quite small, we shall presently reserve judgment on the possible meaning of these changes.

An important question is: Which of the items discriminated most effectively between the high and low employability groups? It will be recalled that the diagnostic rating received by a subject was one of the two scores contributing to his eventual employability rating. However, despite the singularity of the scale, it is unlikely that all of the items in the scale distinguished equally well between the high and low employability groups. Table 22 reports a rank ordering of the items of the scale in a descending order of the magnitude of the F ratio distinguishing the average score on that item for the high employability group from the average score on the same item for the low employability group. It can be noted that 21 of the 25 items that are scored on the 11-point scale discriminate between the two groups at better than the .02 level.

A few comments are in order about those items that discriminate best and those that discriminate least well. One item stands out as by far the best discriminator between the high and low groups. This is the item dealing with "odd or inappropriate behavior." The value of F for the difference between the high and low groups on this item is

TABLE 22

ORDER IN WHICH DIAGNOSTIC RATING SCALE ITEMS DISCRIMINATE BETWEEN HIGH AND LOW EMPLOYABILITY GROUPS

F Rank	Item Number	Item Description	F	p
1	12	Odd or inappropriate behavior	61.54	<.0005
2	25	Acceptability of role as worker	45.03	<.0005
3	20	Ability to communicate	40.92	<.0005
4	8	Rhythm and coordination	40.14	<.0005
5	7	Organization of work method	37.96	<.0005
6	6	Comprehension of instructions	31.34	<.0005
7	24	Personalization with foremen	29.50	<.0005
8	14	Requests for assistance	28.41	<.0005
9	5	Effects of anxiety on performance	24.42	<.0005
10	2	Appearance	20.13	<.0005
11	19	Reactions to group pressure	19.66	<.0005
12	21	Acceptance of foreman criticism	16.45	<.0005
13	11	Calmness during work	13.79	<.0005
14	18	Social Contacts	13.37	<.0005
15	22	Reaction to foreman pressure	13.23	<.0005
16	10	Response to own perf.	12.28	.001
17	23	Reaction to change of directions	10.18	.002
18	13	Complaints about self	9.30	.003
19	9	Quality of work	6.83	.010
20	17	Social contact	6.80	.010
21	16	Initiative	6.03	.015
22	15	Complaints about others	2.97	.087
23	4	Level of anxiety	2.42	.122
24	26	Response to support or praise	.03	.868
25	1	Reaction to new job	.00	1.00

far higher than for the second most discriminating item, "acceptability of role as worker." We can thus see a corroboration of much of the literature reviewed in Chapter II. What determined the employability of a handicapped person most is more often his personal characteristics than specific deficiencies with respect to work tasks. In fact, the three best items all deal with general personal characteristics of the subjects. Strikingly, the ability to communicate one's thoughts and feelings is as important as the next three task-related items concerning rhythm, organization and taking directions.

It is also notable that the two items on which substantial growth was manifested by the subjects, number 6 and number 20, are both among the most effective discriminators. Conversely, the only two scale items showing negative change, number 1 and number 26, are the two poorest discriminators. We have already observed in Chapter IV that the rating scores of the high employability group improved between Year I and Year III, while those of the low employability group worsened (Table 15). It may be that the improvement in the high group is especially in the areas of communication and comprehension of instructions, two areas of behavior most amenable to the influence of the social-vocational atmosphere of the workshop. The low employability group may have expressed failure in the social and vocational sphere, and thus deteriorated.

Discussion of the Rating Scale

The fondest hopes held for the diagnostic rating scale were not realized. Yearly changes in scale scores through which we could trace the developing course of vocational growth were not manifested. The reasons for this, attributable to the raters' ceiling effect, have been discussed in detail above. Furthermore, attempts to identify factorially independent subscales of the rating scale also met with failure. Nevertheless, the scale proved a generally useful diagnostic tool. The total score related consistently to other variables and loaded highly on the competence factor in the factor analysis. Combined with production, ratings generated the employability score which distinguished the low and high employability groups. This distinction has shown itself to be quite fruitful. Finally, analysis of individual scale items has helped to clarify the manner in which overall employability in the handicapped is related to their personal characteristics as workers.

CHAPTER VI

INTELLIGENCE

The Wechsler Intelligence Scale for Children (WISC) was administered to every member of the experimental and control groups during each annual diagnostic assessment period. Because it was necessary to administer all of the individual clinical tests in one sitting, one major modification was made in the WISCs administered. In place of the Vocabulary subtest, which is among the most time-consuming portions of the WISC, the Digit Span subtest was administered. The total test thus still consisted of ten subtests, five each in the Verbal and Performance scales. We did not believe that removing the Vocabulary subtest would radically change the meaning of the scores obtained nor markedly diminish the validity of the total score. Rather, examination of the general pattern of intercorrelations among the subtests of the Wechsler suggests that replacing Vocabulary with Digit Span may increase the diversity of attributes being measured and thus add to the potential richness of the data gathered. This is because of the generally low correlations between Digit Span and the other verbal subtests.

The WISC protocols were systematically scored in two different ways. First, each protocol was scored in the traditional manner using the actual age of the client as the basis for transforming a total scale score into an IQ. During the third year, when subjects had generally reached 16 years of age, the conversion tables used were those for subjects of age 15 years, 11 months, which is the oldest age for which the WISC is standardized. We had anticipated that our subjects would pass the upper limit for chronological age on the WISC by the end of the study, but we preferred using the children's scale to the Wechsler Adult Intelligence Scale (WAIS) because we felt it would discriminate best within our retarded population.

We also wished to measure the absolute amount of change on each subtest of the WISC over the three testings. Since the scoring criteria for the tests become more stringent as subjects grow older, a subject can be answering more items correctly on retest without his scores reflecting that improvement. In order to measure gains in scores directly, the subtests for each subject were also rescored every year on the basis of a stable baseline of 14 years, no months. By rescoring these subtests each year using the same baseline, we were able to assess the absolute degree to which scores on each subtest improved, without the interference of changing scoring criteria for increasing age. Thus, while the WISC IQ, Performance Scale and Verbal Scale scores are derived exactly as prescribed by the Wechsler manual, when individual subtest changes are examined, they have been rescored annually for a stable 14-0 baseline.

The study of intelligence has long been the pivot for most research in the field of mental retardation. Clearly, the dominant stream of research treats intelligence as a unifactorial phenomenon, and views mentally retarded individuals as simply lacking in the general factor, G. This is implicit in the multitude of experimental studies where retardates are matched with mental age (MA) and chronological age (CA) controls. It must be assumed in these studies that the IQ or mental age is a valid index of the general intellectual status of individuals. There is little in the research literature to disconfirm that assumption. Surely, the probability is high that an individual whose IQ is 65 will perform on most tasks in a manner radically different from an individual of the same age whose IQ is 115, regardless of the pattern of item or subtest scores contributing to those total values. However, to admit that such gross distinctions are usually valid is not to deny that a careful analysis of the components contributing to the total intelligence score might yield a clearer picture of those areas in which retardation is most reversible. That is, given our relatively recent conception of mental retardation as a state amenable to remediation, rather than as an eternal and unchanging position, it behooves us to identify those aspects of intelligence that are most amenable to change.

Other than the observation that, on the Wechsler, the mentally retarded are generally more depressed on the Verbal Scale than on the Performance Scale, little can be asserted definitely about the pattern of Wechsler subscores characteristic of mental retardates. According to Benton (1964), the significance of particular patterns among Wechsler subtest scores for the retarded has not been empirically demonstrated in a convincing manner.

In Chapter IV of this report, we examined the growth in both total IQ and in the Performance and Verbal Scales of the WISC. We also compared the respective gains of the experimental and control groups on these measures. In the present chapter, we will make a careful examination of the ten subtests making up the WISC and ask the following questions. Which subtests appear to contribute to the changes in IQ manifested by our subjects and which do not? When we divide our group into those subjects who appear most employable at the termination of the study and those who appear least employable, which subtests of the WISC appear to distinguish between these two groups most effectively? A paraphrase of that question would be, which subtests of the Wechsler appear to be most closely related to general vocational development? Finally, what is the factorial structure of the WISC for this sample and how are these factors related to vocational development?

Since intelligence, or more accurately the lack thereof, is the *sine qua non* of mental retardation, a clear understanding of its underlying structure is indispensible for any investigation of the characteristics of mentally retarded youngsters.

Stability and Relations with Other Variables

It will be recalled that the stability of WISC IQ was extremely high over the years of the study, as were the stability coefficients of the verbal and performance portions of the test. These three stability coefficients between Year I and Year III for the combined groups were +.86, +.81 and +.80 respectively. In fact, with the exception of the Purdue, they were the most stable variables in the entire study. As reflected in Table 23, the WISC IQ score correlated in a moderately high positive fashion with the other variables which

TABLE 23

CORRELATIONS OF BASIC STATUS VARIABLES AND EMPLOYABILITY WITH WISC IQ FOR COMBINED OLD AND NEW EXPERIMENTAL AND CONTROL GROUPS, YEARS I-III

	N = 55[a] Year I	N = 44[b] Year II	N = 36[c] Year III
Drawings	-.04	-.04	.22
Self-Concept	-.07	-.07	-.30
Level of Asp.	-.01	-.22	-.25
Aspiration Index	-.04	.07	.20
Purdue	.56	.42	.55
Vineland	.31	.32	.31
WISC Verbal	.67	.82	.68
WISC Perf.	.91	.92	.91
Chicago IQ	.71	----	----
Production	.58	.47	.50
Ratings	.34	.31	.37
Employability	.43	.41	.52

[a] For N = 55, the probability of $\underline{r} \geq .26$ occurring by chance = .05; the probability of $\underline{r} \geq .34$ occurring by chance = .01.

[b] For N = 44, the probability of $\underline{r} \geq .31$ occurring by chance = .05; the probability of $\underline{r} \geq .40$ occurring by chance = .01.

[c] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (All tests two-tailed)

comprised the "competence cluster." The factor analysis discussed in Chapter IV found the total IQ score loading on the competence factor.

The situation becomes more complex when we begin breaking total IQ down into its component parts. This subdivision is done in two steps. First, we shall examine the differences between the ways in which Verbal and Performance Scale scores relate to other variables and discriminate among those high and low in employability. Second, we shall move directly to the ten subtests making up the WISC and examine the manner in which each of these distinguishes between those high and low in employability. Finally, we shall report a factor analysis of the ten WISC subscales for each year in order to examine the groupings of intellectual competencies which characterize our subjects over the course of the study.

Tables 23 through 25 report the correlations of WISC IQ, WISC Verbal and WISC Performance with the basic status variables and employability across the three years. A number of things should be kept in mind when examining these tables. As was reported in Chapter IV, there was generally a moderate to low positive correlation between the verbal and performance portions of the WISC. The performance portion of the Wechsler consistently correlated much more highly with WISC total score than did the verbal portion. This is probably because there is much greater variability in scores on the Performance Scale of the WISC than on the Verbal Scale for this sample. That is, the much smaller standard deviation for the verbal portion of the test could account for both its low correlation with the Performance Scale and its relatively low contribution to the WISC IQ score.

This difference in variability, however, ought not to be seen as merely a statistical artifact. Retarded subjects generally score better on performance than on verbal tasks. This is an observation corroborated many times in the literature on mental retardation. Scores on the Performance Scale generally correlate more highly with the Production and Purdue Pegboard variables of the competence cluster than do scores on the Verbal Scale. Finally, as evidenced by the factor analysis reported in Chapter IV, by the third year the two scales tend to load highly on different factors. Clearly, the Verbal and Performance Scales are measuring very different competencies in our sample of mentally retarded subjects.

What might some of these differences be? The Verbal Scale correlates at a slightly higher level with diagnostic ratings over the three years than does the Performance Scale. In contrast, the Performance Scale correlates more highly with production. It may be that we are seeing that the two components of employability are each related to different components of general intelligence. That aspect of employability reflected in diagnostic ratings deals with personal-social characteristics, and seems most closely related to verbal intelligence. The motor-speed aspects of employability, reflected in the production variables, relate best to the performance component of intelligence. We shall now examine the manner in which these scales and their constituents relate to high and low employability status among our subjects.

TABLE 24

CORRELATIONS OF BASIC STATUS VARIABLES AND EMPLOYABILITY WITH WISC PERFORMANCE FOR COMBINED OLD AND NEW EXPERIMENTAL AND CONTROL GROUPS, YEARS I-III

	N = 55[a] Year I	N = 44[b] Year II	N = 36[c] Year III
Drawings	-.11	-.01	.16
Self-Concept	-.16	-.26	-.35
Level of Asp.	-.05	-.25	-.28
Aspiration Index	-.05	-.004	.02
Purdue	.50	.48	.55
Vineland	.27	.32	.26
WISC IQ	.91	.92	.91
WISC Verbal	.35	.60	.32
Chicago IQ	.63	----	----
Production	.53	.43	.50
Ratings	.33	.19	.29
Employability	.31	.36	.47

[a] For N = 55, the probability of $\underline{r} \geq .26$ occurring by chance = .05; the probability of $\underline{r} \geq .34$ occurring by chance = .01.

[b] For N = 44, the probability of $\underline{r} \geq .31$ occurring by chance = .05; the probability of $\underline{r} \geq .40$ occurring by chance = .01.

[c] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (All tests two-tailed)

TABLE 25

CORRELATIONS OF BASIC STATUS VARIABLES AND EMPLOYABILITY WITH WISC VERBAL FOR COMBINED OLD AND NEW EXPERIMENTAL AND CONTROL GROUPS, YEARS I-III

	N = 55[a] Year I	N = 44[b] Year II	N = 36[c] Year III
Drawings	.06	-.04	.09
Self-Concept	.18	.17	.11
Level of Asp.	.03	-.17	-.07
Aspiration Index	.01	.14	.43
Purdue	.42	.32	.29
Vineland	.24	.32	.25
WISC IQ	.67	.82	.68
WISC Perf.	.35	.60	.32
Chicago IQ	.49	----	----
Production	.37	.28	.26
Ratings	.31	.49	.33
Employability	.47	.44	.35

[a] For N = 55, the probability of *r* $\geq$.26 occurring by chance = .05; the probability of *r* $\geq$.34 occurring by chance = .01.

[b] For N = 44, the probability of *r* $\geq$.31 occurring by chance = .05; the probability of *r* $\geq$.40 occurring by chance = .01.

[c] For N = 36, the probability of *r* $\geq$.34 occurring by chance = .05; the probability of *r* $\geq$.43 occurring by chance = .01. (All tests two-tailed)

Relations to Employability

We have already seen that the Wechsler IQ scores do not distinguish between the experimental and control groups. A further analysis was conducted on each subscale of the Wechsler for each year comparing the scores of the experimental and control groups in order to test the hypothesis that whereas no general differences were discernible in IQ, some specific differences, especially in the performance domain, might have occurred. Examination of the differences between scale scores for experimental and control groups and the F values for the ratios of those differences failed to reveal any such differences that could not be attributed to chance. These comparisons are not summarized in a table. We concluded that the experimental treatment had not had any positive effect either upon general intelligence or on any of its ten measured components as classified by the WISC.

An important question remained unanswered. It has already been reported in Chapter IV that the WISC IQ is significantly different for the group high in employability and the group low in employability during both the first and third years of the study. Additionally, both the performance and the verbal portions of the WISC distinguish between these groups. The only exception was the Performance Scale for the first year, where the probability value attached to the value of F for that difference reached .23. Which subtests of the WISC were contributing to these differences? Were they, like the items of the diagnostic rating scale, monolithically distinguishing between subjects high and low in employability? Or were specific subtests responsible for the observed differences?

Figure 10 shows the changes in IQ score for the high and low employability subjects respectively. Six intelligence test administrations are reported in that figure. The first three, labeled Chicago 1, 2 and 3, are the scores received by our subjects on the three most recent individual IQ tests (usually Stanford-Binet) administered by psychometrists of the Chicago schools prior to the onset of the current program. Whereas all high and low employability subjects had test scores for the Chicago 3 administration, there were considerable missing data for Chicago 1 and 2. Only 16 out of 32 subjects had Chicago 1 scores, and 24 had Chicago 2 scores. The score called Chicago 3 on this figure was referred to as simply Chicago IQ in Chapter IV. The administrations marked 1, 2 and 3 on Figure 10 are the three annual WISC administrations of the diagnostic assessment periods. The value below each point on the lower line of the graph is the level of significance for the difference between the scores of the two groups for that year.

In contrast to the consistently falling pattern of IQ on repeated measures by the Chicago schools, the WISC scores all show a decided rise over time. Apparently, something is happening as a consequence of contact with the project, irrespective of experimental or control group status. Rises in scores cannot be attributed merely to practice effects, since parallel opportunities for practice exist for repeated administrations of the Binet.

Could the effect be due to statistical regression? The manner in which regression toward the mean operates generally predicts that whenever any group is selected because of their low status on a

Figure 10

AVERAGE IQ SCORES FOR LAST THREE TESTS ADMINISTERED BY CHICAGO SCHOOLS AND THREE WISC ADMINISTRATIONS DURING RESEARCH PROGRAM FOR HIGH AND LOW EMPLOYABILITY GROUPS WITH SIGNIFICANCE LEVELS FOR DIFFERENCES BETWEEN GROUPS

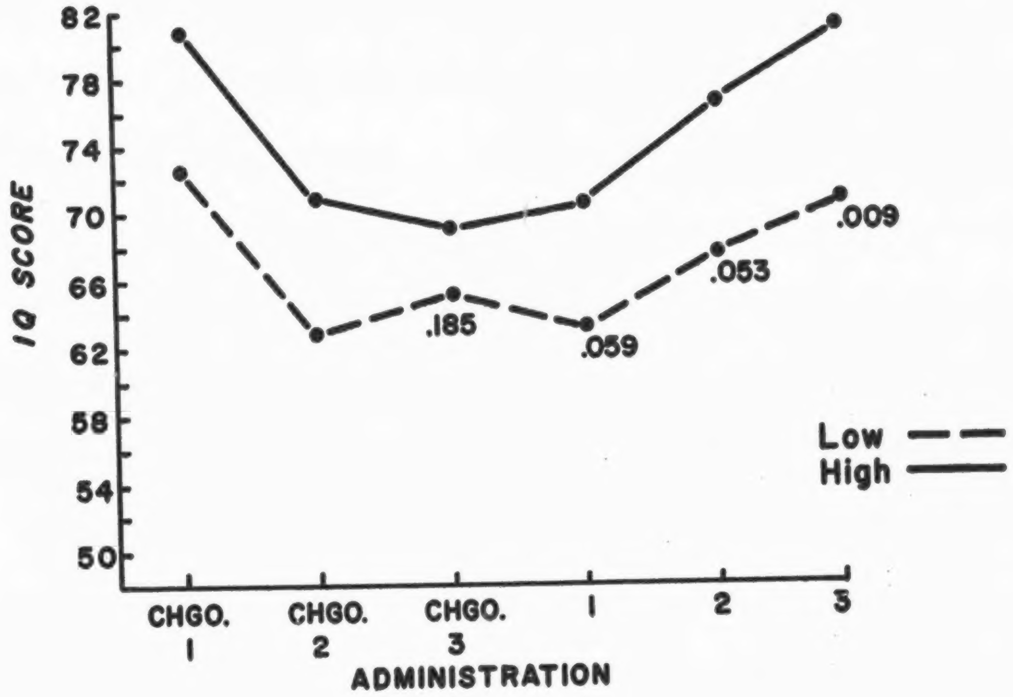
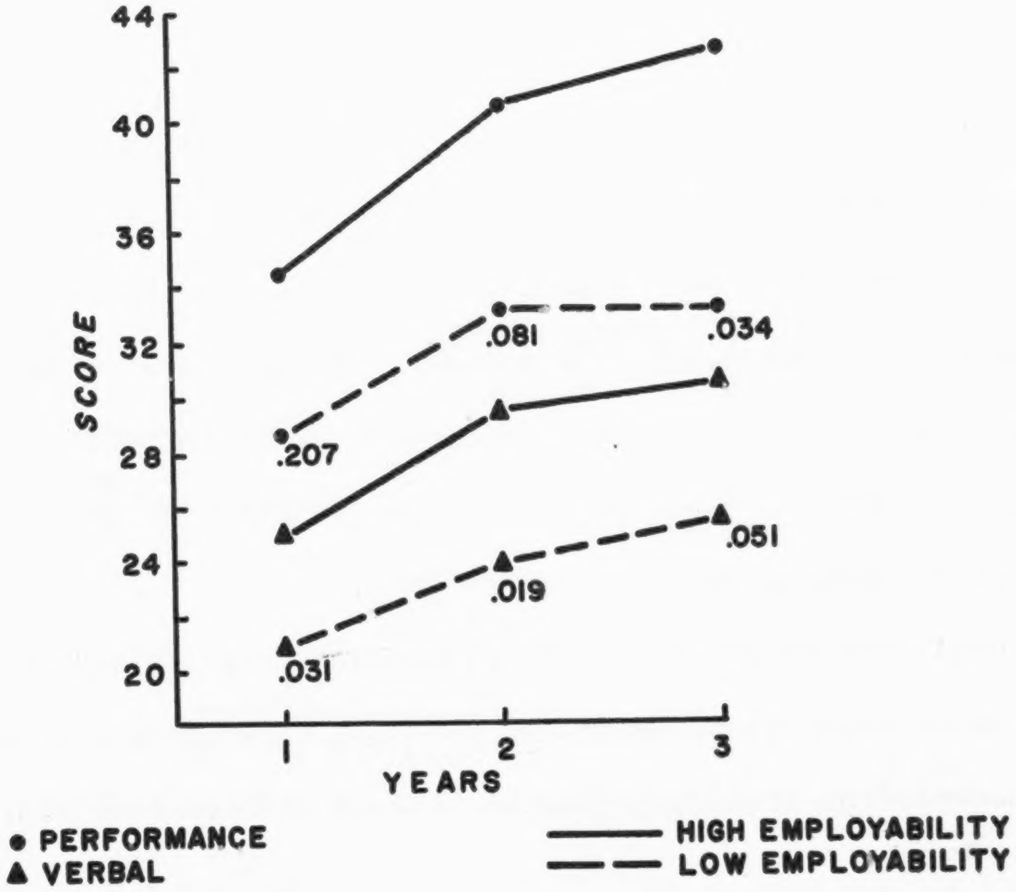


Figure 11

CHANGES IN SCORES ON THE PERFORMANCE AND VERBAL SCALES OF THE WISC FOR HIGH AND LOW EMPLOYABILITY GROUPS OVER THREE YEARS



particular measure, the next time they are assessed on that measure or one much like it, they will manifest a sharp gain in score. If statistical regression were operating here, therefore, we would anticipate a large gain between Chicago 3 IQ and WISC 1, which would be further amplified by the smaller standard deviation of the WISC compared to the Binet. Since the first WISC was administered before any service was rendered in the program, such gains could under no condition be attributed to effects of the treatment.

Figure 10 clearly shows that no such gain from Chicago 3 to WISC 1 has occurred. The gains observed are between WISC 1 and subsequent WISC administrations and cannot, by any stretch of the imagination, be attributed to the effects of statistical regression. Contact with the present project is apparently serving to stimulate intellectual growth among both experimental and control subjects.

As can be seen in Figure 11, the scores on the Performance Scale are consistently higher than on the Verbal Scale over the course of the program with essentially no overlap between the two. The difference between the high and low employability groups remains approximately the same on the Verbal Scale while increasing significantly on the Performance Scale. It is also interesting to note that the high employability group gains almost twice as much on the Performance Scale as it does on the Verbal Scale, while the low employability group gains equally on both. A final observation is that by the end of the third year the average total IQ of the group high in employability is 81, which is higher than the upper limit for EMH classes. Moreover, third year WISC IQ scores for these subjects approximate the average of their scores on the Chicago 1 administration, when most of them were between 8 and 10 years of age.

Analysis of Subscales

We now deal with the question of whether these differences in IQ between the groups high and low in employability are monolithic or are attributable to differences only in specific WISC subtests. That is, have we reason to believe that the relations between IQ and employability are specific to particular components of intelligence rather than being general across all of the intellectual components? In order to answer this question, differences between WISC subtest scores for the high and low employability groups were calculated for each year. Figures 12 through 21 report these difference between the high and low employability groups for all subscales of the WISC and include the significance levels of these differences. It will be noted that there is no monolithic differences in IQ between the high and low employability groups, but rather these differences are specific to four subtests. These subtests are Comprehension and Similarities from the Verbal Scale, and Picture Arrangement and Coding from the Performance Scale.

What do these tests have in common? The Comprehension and Similarities subtests of the Verbal Scale are the two which reward most highly the amount and quality of a subject's verbalization. It will be recalled that in our administration of the WISC we replaced the Vocabulary subtest with Digit Span. Thus, Comprehension and Similarities were the only two tests in the Verbal Scale as administered in this study in which the most elaborated correct response would receive two points while the merely adequate response would receive only one point.

In the Comprehension subtest, the questions require general common sense, judgment and social intelligence. In the Similarities subtest, the questions require the ability to educe abstract relations between concepts. In both, the more elaborated the subject's response, the more likely he is to be awarded higher scores.

The two performance subtests both emphasize a combination of sequential ordering and speed. In Picture Arrangement, the subject must take a set of four or more cards with pictures on them and put them in an order which will tell a story. Speed is emphasized. It is generally asserted that social intelligence is important in making the required inferences concerning the best order of cards. In the Coding subtest, the subject must learn a nine-item code relating the digits 1-9 to a set of arbitrary marks. For example, 2 is associated with); 8 is associated with ⨪. He must then write the appropriate code symbols under a long series of numbers as rapidly as possible.

In both these subtests, the emphasis on sequential ordering is in contrast with the other three WISC Performance subtests, Picture Completion, Object Assembly and Block Design, which require the analysis and reconstruction of a single object at a time.

We are now prepared to ask whether the factorial structure of intelligence for this sample is related meaningfully to these distinctions. In turn, we will consider the relations between any factors so identified and the other variables related to employability.

Figure 12

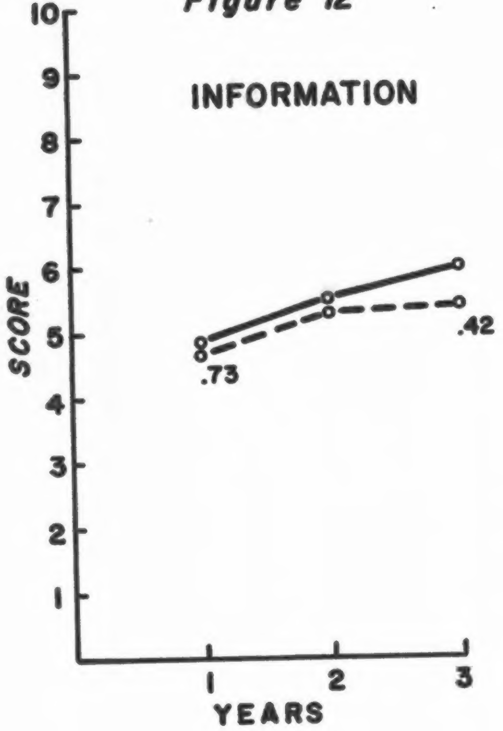


Figure 13

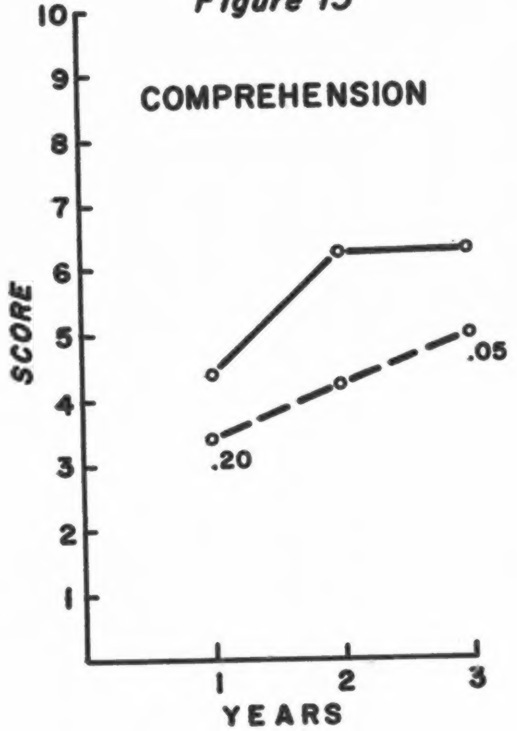


Figure 14

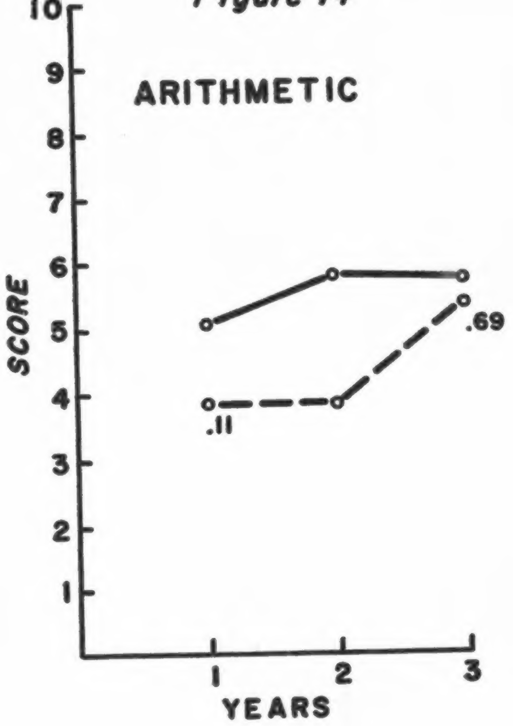
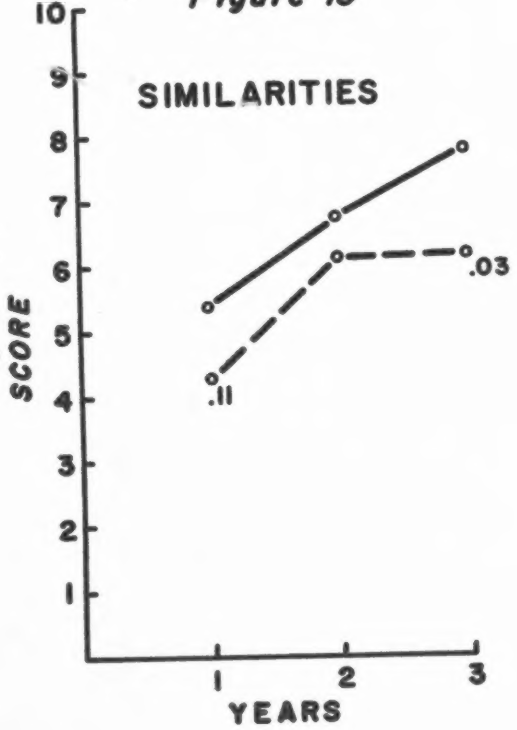


Figure 15



CHANGES IN VERBAL SUBTESTS OF THE WISC FOR HIGH AND LOW EMPLOYABILITY SUBJECTS OVER THREE YEARS WITH SIGNIFICANCE LEVELS OF DIFFERENCE FOR FIRST AND THIRD YEARS

HIGH ——
LOW — —

Figure 16

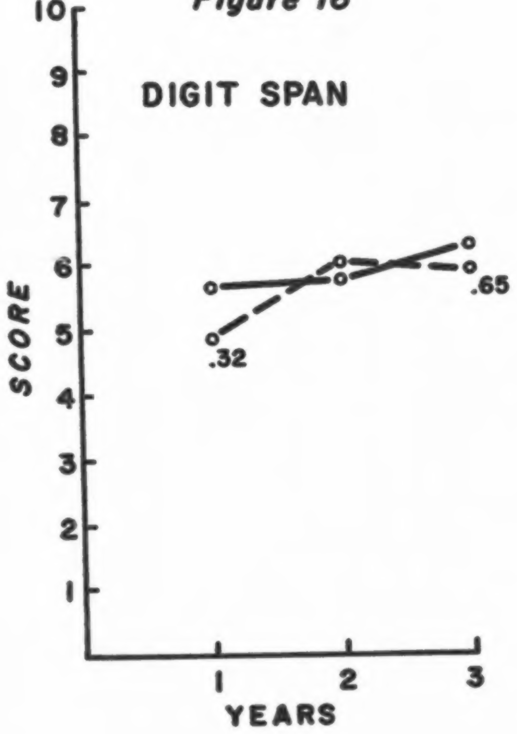
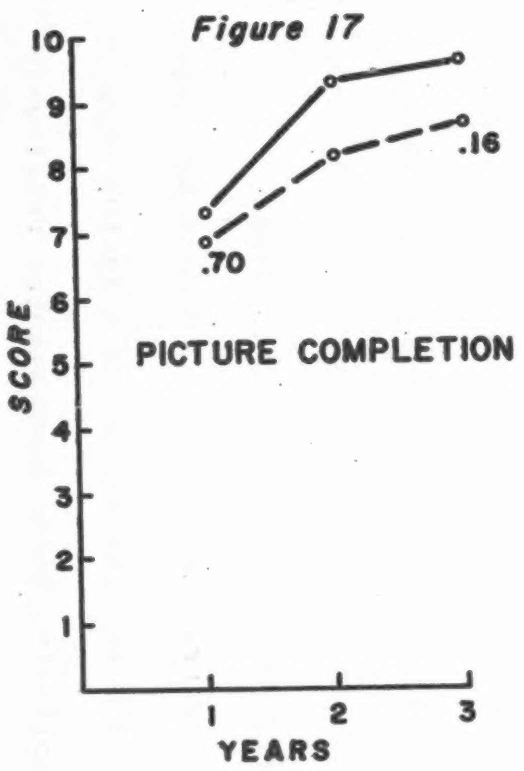
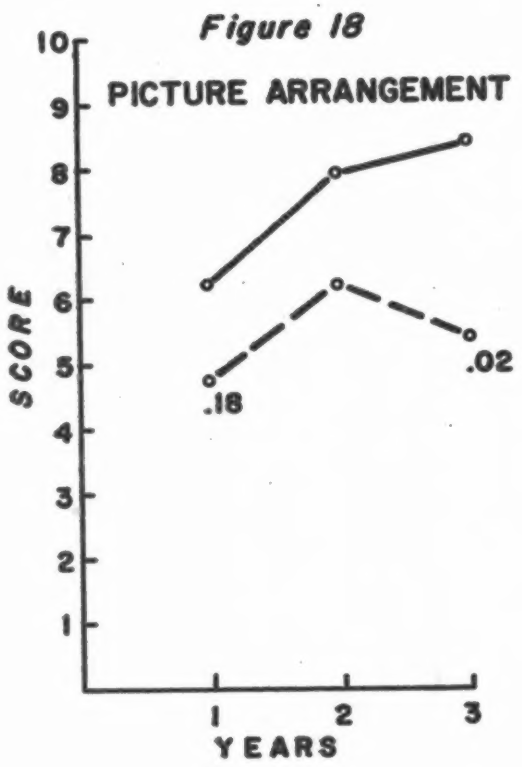


Figure 17



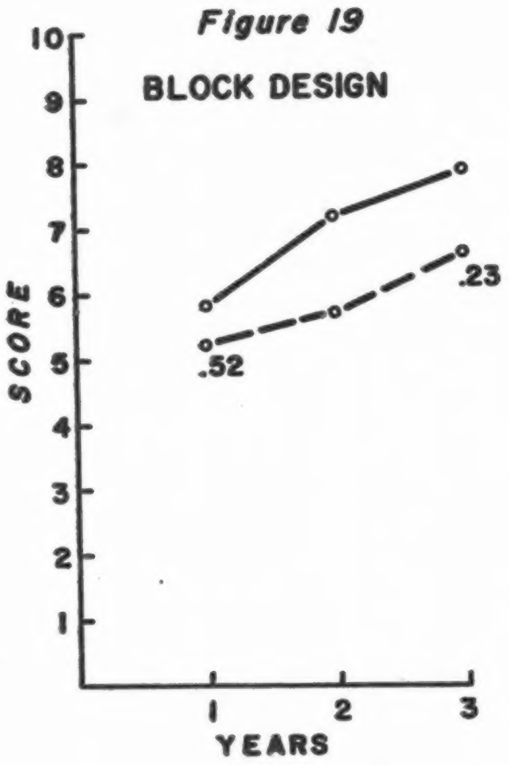
PICTURE COMPLETION

Figure 18



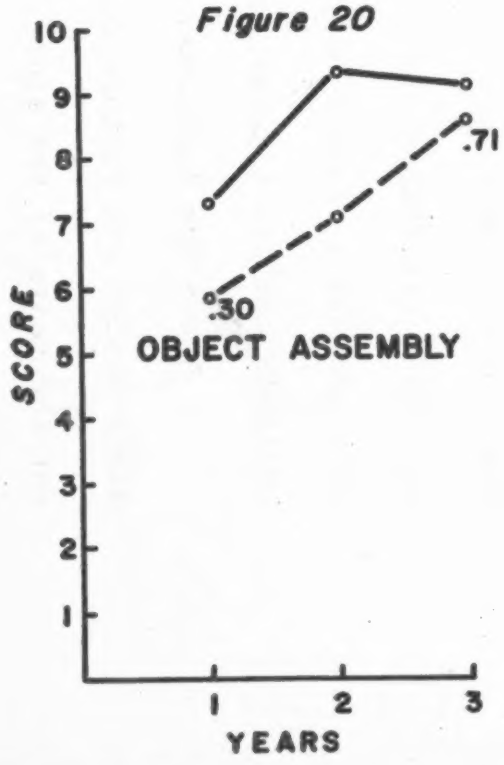
PICTURE ARRANGEMENT

Figure 19



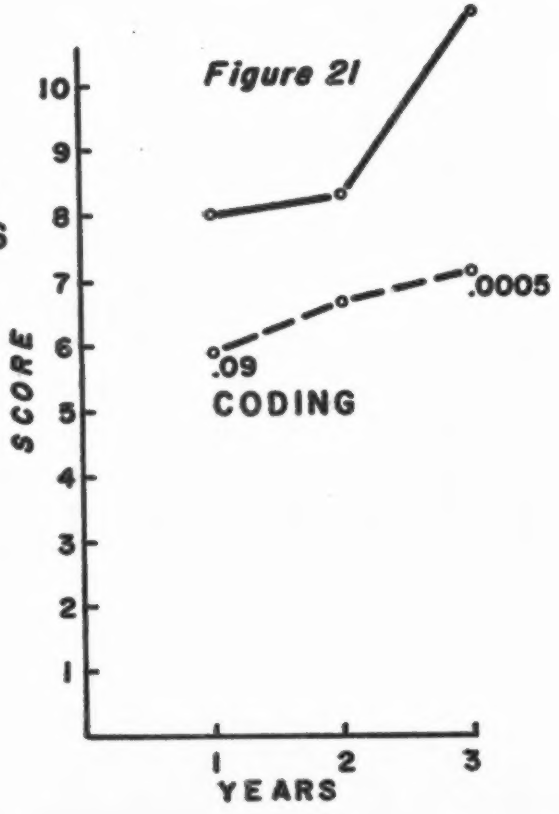
BLOCK DESIGN

Figure 20



OBJECT ASSEMBLY

Figure 21



CODING

CHANGES IN PERFORMANCE SUBTESTS OF THE WISC FOR HIGH AND LOW EMPLOYABILITY SUBJECTS OVER THREE YEARS WITH SIGNIFICANCE LEVELS OF DIFFERENCE FOR FIRST AND THIRD YEARS

HIGH ——
LOW — —

The Factorial Structure of Intelligence

The final question to which this chapter will address itself is that of the factorial structure of intelligence in this sample. What are, factorially speaking, the components of intelligence among this group of retarded adolescents? That is, what relatively independent aspects of intelligent behavior are being tapped by the WISC and submerged together in the total IQ score? An answer to that question was sought through a factor analysis of the WISC subscores over each of the three measuring periods. For Year I, all 55 scores were analyzed. For the remaining two years, only the subjects who remained for the entire study were used. The year-by-year results of this factor analysis are reported in Table 26. The factors and loadings reported in that table were generated by a principal components analysis using a Varimax Rotation. A Kiel-Wrigley criterion was used to limit the maximum number of possible factors generated. It was generally observed that, on the first iteration of the Varimax Rotation, the general split was into two factors, on which were loaded the items of the Verbal Scale and the Performance Scale respectively. The further discriminations observed in the table are the result of successive rotations until the Kiel-Wrigley criterion was met. For this particular analysis the criterion for terminating rotation was a maximum of four factors or a factor on which only one variable had its highest loading, whichever occurred earliest.

Among the Performance subtests, the cluster of Object Assembly, Block Design and Picture Completion remains stable as a factor throughout the years of the study. Similarly, Digit Span remains relatively

TABLE 26

FACTOR LOADINGS OF WISC SUBSCORES FOR EACH YEAR

	Factor and Proportion of Variance Accounted For							
	I (26%)		II (13%)		III (22%)		IV (11%)	
Year I (N = 55)	Object Assembly	.894	Comprehension	.823	Information	.787	Digit Span	.959
	Block Design	.841			Similarities	.654		
	Picture Completion	.701			Coding	.632		
	Picture Arr.	.618			Arithmetic	.627		

	Factor and Proportion of Variance Accounted For							
	I (25%)		II (26%)		III (13%)		IV (14%)	
Year II (N = 35)	Block Design	.956	Information	.815	Digit Span	.919	Coding	-.918
	Object Assembly	.849	Similarities	.802				
	Picture Completion	.596	Picture Arr.	.648				
			Comprehension	.645				
			Arithmetic	.451				

	Factor and Proportion of Variance Accounted For							
	I (22%)		II (24%)		III (15%)		IV (16%)	
Year III (N = 36)	Block Design	.890	Comprehension	-.856	Arithmetic	.834	Coding	.879
	Object Assembly	.866	Similarities	-.851	Digit Span	.763	Picture Arr.	.784
	Picture Completion	.657	Information	-.741				

2

aloof, to be joined by Arithmetic only in the third year. Information, Comprehension and Similarities also tend to cluster together, except for the first year, when Comprehension loads on its own factor.

We will examine the four factors generated during Year III most carefully, since it was on the basis of Year III scores that employability was defined. It is useful, if occasionally unscholarly, to assign appropriate names to factors. In this case, however, the factor-naming process is by no means a difficult or esoteric activity. The subtests have grouped themselves in a particularly rational and easily accountable manner.

Factor I we shall call Perceptual Part-Whole Performance. The three subtests loading highly on this factor, Block Design, Object Assembly and Picture Completion, all require that the subject analyze the parts of some whole and recognize how they fit together into the whole. In the case of Block Design and Object Assembly, he must actually construct that whole, while for Picture Completion he need only recognize and name the part which is missing. The Perceptual Part-Whole Performance factor accounts for approximately 22% of the variance in intelligence for this sample.

Factor II is the Verbal Elaboration factor. The three subtests loading on this factor, Comprehension, Similarities and Information, are the three most verbal subtests of the Verbal Scale as presently employed. They emphasize elaboration far more than speed, and reward the subject for the extensiveness of his verbal report. This factor accounts for 24% of the variance in intelligence, making it the largest single factor for this sample.

Factor III is the Verbal-Numerical factor. Arithmetic and Digit Span are both subtests of the WISC Verbal Scale involving the use of numbers. The fact that the use of numbers in the Digit Span subtest is quite arbitrary, in that letters or colors etc. could be used as well, seems not to be relevant for this sample. Factor III accounts for 15% of the variance in intelligence for this group.

Factor IV is the Sequential Performance factor. Picture Arrangement and Coding each require the subject to make a correct linear sequence of responses. The specific intellectual activities involved in these sequences differ for the two tests. In the case of Picture Arrangement, the major activity is interpretations of and inferences about social situations. For Coding, it involves learning, memory and psychomotor performance. This factor accounts for 16% of the variance in total intelligence for this group.

The four factors identified account for a total of 76% of the variance in intelligence for this sample. Considering that the estimated reliability of the WISC for the present data lies between .85 and .90, we are accounting in these four factors for almost all of the reliable variance that can be measured. In addition to the fact that the four factors elicited make very good sense as general intellectual substructures, there is further evidence that these particular groupings have meaning for intellectual development in the present sample.

It will be noted that only two of these factors contain those subtests of the WISC which discriminated between the high and low employability groups. These are Factor II, the Verbal Elaboration factor and Factor IV, the Sequential Performance factor. The two variables loading on the Sequential Performance factor, Coding and Picture Arrangement, were the two best discriminators between high and low employability subjects. Two of the three verbal variables, Comprehension and Similarities, did almost as well. We may thus conclude that, although IQ in general distinguishes effectively between our high and low employability groups, two of the factors making up intelligence for this group are essentially responsible for this discrimination. These two factors of intelligence in the retarded adolescent, the Verbal Elaboration factor and the Sequential Performance factor are most relevant to the understanding of vocational development.

Discussion of Intelligence

We have demonstrated that there is a clear relation between the specific subtests of the WISC which discriminate between subjects high and low in employability and the factor structure of intelligence. It is the ability to make appropriately elaborated verbal statements and to accomplish sequential performance tasks that distinguishes the high from the low employability youngster.

Of the four subtests which discriminate, it is Coding which does the best job. This is of particular importance considering the task similarity between Coding and the Purdue Pegboard. It will be recalled that the Purdue had by far the highest correlation with employability of all the other basic status variables examined as predictors of employability in the multiple-regression analysis reported in Chapter IV. Both Coding and the Purdue emphasize the psychomotor abilities of manual dexterity combined with speed. In addition, both call upon the subject to learn something new and subsequently apply it. The fact that these attributes are most highly related to the employability criterion have implications that are important to our understanding of vocational development. These will be examined further in the Chapter XIV, the General Discussion.

CHAPTER VII

THE ASSESSMENT OF ENVIRONMENT

During each of the three diagnostic assessment periods, interviews were conducted with the subjects themselves and their parents, both at work and at their homes. The purpose of those interviews was to assess the environments of the participants in the study. During the first year, four separate interviews were conducted. Prior to the first summer, an intake interview was conducted at the offices of the Chicago Jewish Vocational Service with the subject and one or both of his parents together and separately. That is, subject and parent met together with an interviewer initially and were subsequently separated for individual interviews. An additional interview was conducted with the parent in the home, during which the subject may or may have not been present. It was as part of this interview that the Vineland Social Maturity Scale was administered. Finally, during the week of the diagnostic assessment period, a somewhat more probing diagnostic interview was conducted with the subject alone. These four interviews were compressed into two, one each with parent and subject, during the remaining years of the study.

The contents of these interviews were all derived from a single interview schedule initially developed on general theoretical grounds for use in this study. A manual was developed in which all of the kinds of information that would be needed from the informants were outlined and the general theoretical rationale for gathering such information was clarified. This manual, containing both the questions to be asked and the accompanying rationale, was duplicated and put in the hands of all interviewers, for it was thought that the rationale would aid interviewers in probing beyond surface or superficial responses made by informants. The entire interview schedule and accompanying rationale are reproduced in Appendix B. This total interview schedule was then subdivided into the four separate schedules for purposes of expediting and facilitating the general interview process. However, these have not been reproduced.

In addition to the regularly scheduled interview conducted during each of the three diagnostic assessment periods, the original experimental and control groups were followed up during the summer of 1965, which was the time of the replication groups' final diagnostic assessment, and were administered a follow-up interview. Thus, the original experimental and control groups were interviewed one more time than the replication groups. Finally, a short follow-up interview was conducted by telephone during June of 1967. For the original experimentals and controls, this was five full years after their first contact with this project; while for the replication groups, four years had elapsed. The purpose of this final follow-up was to identify the conditions of the school-leaving and initial vocational successes or failures of those who had been fourteen-year-olds when we began our research. Because it was exceedingly difficult to reach all of the subjects during this final follow-up period, we will not attempt to integrate those data into the body of our report. Instead, the results of this final follow-up are discussed in the Epilogue chapter, as well as in the individual case studies as appropriate.

A coding system was developed to facilitate the summarizing of the interview data and their subsequent quantitative analysis. That coding system is reported in Appendix C. Next to each coded interview item, we have reported the frequency with which the responses to the interview of the 55 Year I subjects or their parents were coded into that particular category. Hence, the data in Appendix C represent a general picture of the personal, social and family characteristics of all the subjects who began the program. They may also be useful as a general description of the characteristics of EMH adolescents in the public schools.

Before moving to the data themselves, one unfortunate note must be sounded. When over 100 interviews with children and their parents must be conducted during a very short time period each year, many interviewers must be used. In our case, every interviewer was well trained academically, had read the detailed manual and rationale with care and ostensibly understood the purpose of the interview. Nevertheless, there persisted many individual differences among the interviewers in the degree to which they took seriously the details of the interview and the importance of staying closely within the structured outline. The extent to which this had occurred did not strike us until we began the process of coding the interview protocols. It was only when one attempted to analyze the contents of interviews using a detailed coding system that the absence of many needed pieces of information became apparent.

Examination of the protocols did not reflect any consistent pattern to the missing data. We therefore proceeded with our analyses as planned. It would appear that the missing responses have not distorted the findings. When too much information was missing, we did not interpret particular sections. For these reasons, response frequencies in the tables which follow will often not add up to 100%.

The importance of this chapter is that it will allow us to examine the relations between aspects of the environments of EMH youngsters and their subsequent employability.

Analysis of Interview Data

An attempt was made initially to identify differences between the experimental and control groups in the interview data. No changes in the interview data were discerned that appeared to distinguish between those two groups. This parallels the absence of such differences in previous chapters.

The next step of the analysis was to examine the differences in interview data between members of the high and low employability groups. It will be recalled that the division of our sample into 18 subjects high in employability and 14 subjects low in employability had been made on the basis of scores on production and ratings which had yielded the Employability Index. This distinction had proved quite fruitful. Significant differences between these groups have already been discussed for most of the diagnostic assessment workshop and test data. We were now prepared to ask whether these differences in the performances of the high and low employability subjects were related to concomitant differences in their personal, social and family backgrounds.

Comparison of High and Low Employability Groups

The first important finding to emerge from examining the personal characteristics of the high and low employability groups was that the high group consisted of ten Negro and eight white subjects. The implications of this finding will be discussed in the chapter concerned with Negro-white comparisons, but it must be considered as relevant throughout the present section to allow for an orderly interpretation of the group differences in the interview data. In addition to the differential distribution of Negroes and whites within the two groups, the groups differed in parental occupation. In the high group, 65% of the fathers had blue collar jobs while the same was true of only 35% of the low group fathers. Although the majority of mothers in both groups were housewives, 100% of those high group mothers who worked held blue collar jobs. Of the low group mothers who worked, 74% held white collar jobs.

Thus the families of low group subjects were primarily middle-class and white while the high group subjects were generally lower-class with approximately half being Negro.

TABLE 27

COMPARISONS OF FAMILY DATA FOR HIGH AND LOW EMPLOYABILITY SUBJECTS, YEAR I

	Low	High
Number of parents at home		
Both parents	40%	70%
Live with mother only	40%	17%
Number of changes in the home situation (changes in the parental figure)		
No change	46%	70%
Number of siblings		
No siblings. Subject is only child	40%	6%
One sibling	20%	12%
More than one sibling	26%	82%
Stability of family situation re. significant figures		
Stable	73%	88%
Unstable	20%	6%
Stability of parental expectations		
Child knows what to expect	40%	24%
Some confusion about what to expect	20%	35%
Indications of mental retardation in rest of family		
No indication	73%	47%
Mental retardation in sibs	0%	11%
Mental retardation in parents	13%	6%
Mental retardation in more than one member	6%	24%
Indications of intellectual excellence in family		
Present in family	47%	12%
Absent in family	47%	65%
Median number of people in home	4	7
Percent of clients having own room	40%	0%
Parents' perception of child's problem		
Intellectual	87%	41%
Other (emotional, motivational, physical)	0%	47%
Realism of mother's expectations		
Realistic	73%	47%
Expects achievement beyond possible level	13%	24%
Mother's ideas about what could be done to help her child		
Realistic	67%	18%
Unrealistic	0%	18%
Needs no help	13%	29%

Current Family Situation

Most of the findings reported in this section are summarized in Table 27. Tabled data are always from Year I of the study. Stability of the home situation varied, with each group having greater stability in some aspects and less in others. The majority of the high group (70%) lives at home with both parents while only 40% of the low group lives with both parents at home. Likewise, 70% of the high group report no changes in parental figures while only 46% of the low group report no changes.

Concerning the marital situation, the high group appears to come from more stable families. However, this group also comes from larger families with the median number of people in the family being around seven while the families of the low group number about four. Further, no high group children have their own room while 40% of the low group children have their own room. The parents of the low group have more stable expectations for their children than do high group parents, thus there is more confusion within the high group concerning parental expectations than there is within the low group. This is consonant with the findings that mothers of the low group were more realistic in their expectations for their children and also were more realistic about what could be done to help their children.

Intellectually the families of the two groups were quite different. The low group parents had more education than the high group parents. In 47% of the low group families, interviewers reported the presence of intellectual excellence. Similar reports were made for only 12% of the high group families. There was no indication of mental retardation among other family members in 73% of the low group families; likewise in only 47% of the high group families.

Thus, with the exception of number of parents at home and stability of the marriage, the low group families seemed to provide a superior social and intellectual environment. However, this intellectual and social superiority of the low group families may have been a contributing cause of problems. It seems more probable that a family displaying intellectual excellence would hold to standards dissonant with the intellectual capabilities of a retarded child than would a family with little or no intellectual excellence. It also seems probable that a small family would be more likely to shelter and overprotect a retarded child than would a large family. If this hypothesis has any truth value, then the dissonant standards and sheltering may have actually been factors contributing to or compounding the children's handicap. This consideration may explain why subjects from middle-class families tended to be in the low employability group, while those from lower-class families characterized the high employability group.

Friendship Patterns and Social Relations

The social relations of both groups varied considerably over the three-year study period. During the first year of the study, the social relations of the high group were generally more mature than were those of the low group. However, by the third year the low group improved enough to lessen the differences considerably.

Across the three years, the high group had more friends outside the workshop group and very few were isolates as compared with the low group. During the first year the high group subjects had more friends of their own age than did the low group, but by the third year this difference was no longer present. A high percentage of the high group consistently reported having friends within both sexes; this was not the case within the low group.

TABLE 28

COMPARISONS OF FRIENDSHIP PATTERNS AND SOCIAL RELATIONS FOR HIGH AND LOW EMPLOYABILITY GROUPS, YEAR I

	Low	High
Number of friendships		
More than three friends outside workshop	20%	59%
Two or three friends outside workshop	47%	24%
One friend or isolate	27%	18%
Age of friends		
Same age as client	47%	71%
Older than client	13%	0%
Younger than client	33%	24%
Sex of friends		
Same sex as client	87%	53%
Both sexes	0%	36%
Needs concerning social relationships		
No neurotic social needs	33%	29%
Needs to dominate	0%	24%
Needs to be led	27%	0%
Formal group membership		
Belongs to one or more formal groups	33%	53%
Doesn't belong to a formal group	60%	47%
Longitudinal view of peer relationships		
Improving	0%	0%
Remaining stable	13%	29%
History of few friends	40%	18%

Regarding social needs, neither group appears to be very stable. Initially, approximately 30% of each group reported no neurotic social needs. Both groups improved over the three years to 40% reporting no neurotic social needs the third year. However, longitudinally the high group appears to have had generally better social relationships with peers. When compared with the low group subjects, very few of the high group had a history of few friends or disintegrating peer relationships. Further, the high group was more active in formal group membership (53% belonged to one or more formal groups) than was the low group (33% belonged to one or more formal groups).

Activities and Hobbies

The high group was generally more mature than the low group in regard to their activities and hobbies. Initially, 59% of the high group had hobbies as compared with only 33% of the low group. However, by the third year, 70% of each group reported having hobbies. The general level of interest was appropriate to age level with 71% of the high group and only 33% of the low group. Further, there were differences between groups in both the place and the nature of the major leisure time activity. The activities of the high group were generally active and done in their surrounding neighborhood. Those of the low group were generally sedentary and took place at home. Further, the activities of the high group tended to be of a group nature while those of the low group were generally individual. Thus the high group tended to be more active, motivated and social than the low group.

TABLE 29

COMPARISON OF ACTIVITIES AND HOBBIES FOR HIGH AND LOW EMPLOYABILITY GROUPS, YEAR I

	Low	High
Hobbies		
Have hobbies	33%	59%
Have no hobbies	60%	35%
Client's level of interest		
Appropriate to age level	33%	71%
Slightly below age level	33%	12%
Decidely immature	27%	12%
Nature of client's major leisure activity		
Sedentary	60%	35%
Active	27%	53%
Primary place of major leisure activity		
At home	67%	41%
In the neighborhood	27%	47%
Major leisure activity is individual	60%	35%

Educational History

The greatest educational difference between the two groups lies in their past history of school attendance. Of the high group, 76%

TABLE 30

COMPARISON OF EDUCATIONAL HISTORY OF HIGH AND LOW EMPLOYABILITY GROUPS, YEAR I

	Low	High
Educational history		
Client attended regular classes for more than two years	60%	76%
Entire school attendance was in Chicago public schools	20%	76%
Attitude toward school was positive	80%	59%

have spent their entire school history in the Chicago public schools. This is true of only 20% of the low group. The rest of this group has at one time been enrolled in other public or private school systems. The groups also differ in the number of years spent in regular classes. In the high group 76% of the subjects were in regular classes for two or more years; only 60% of the low group were in regular classes for that length of time. On the average the low group subjects were identified as being mentally retarded at an earlier age than were subjects in the high group.

During the first year, 80% of the low group reported positive attitudes towards school as compared with only 59% of the high group. However, during the second and final years, fewer of the low group had such attitudes; and there was thus no distinction between groups regarding attitudes toward school beyond the first year.

Work Background

The groups were similar when compared on the basis of jobs they had held; however, they differed markedly when comparison was based on performance of chores and tasks around home. The high group seemed to assume more responsibility at home than did the low group; 41% of the high group performed at least three chores at home; 13% of the low group did likewise. Further, with 65% of the high group, their chores went considerably beyond maintaining their own personal area and belongings, but this was so with only 20% of the low group. Thus, although there are no basic differences between the groups concerning their outside jobs, the high group far surpassed the low group in amount of responsibility assumed at home.

TABLE 31

COMPARISON OF WORK BACKGROUND OF HIGH AND LOW
LOW EMPLOYABILITY GROUPS, YEAR I

	Low	High
Work background		
Number of chores at home		
Over three	13%	41%
Under three	73%	53%
Client performs chores considerably beyond his immediate personal area	20%	65%

Self-Concept

There were generally little or no group differences in stated self-concept. When differences did exist, they often seemed contradictory. The high group sometimes had a lower self-concept than the low group, although on the basis of their superiority over the low group one would have expected them to have higher self-concepts.

There were slight group differences in social self-concept with more subjects in the high group perceiving themselves as being popular than unpopular. The opposite was true of the low group. During the first year, there were no major differences between the groups in their perceptions of their own health; however, by the third year more of the high group subjects perceived themselves as more healthy than did the low group subjects. This pattern was reversed in the subjects' perception of personal appearance. Those in the low group had a higher perception of personal appearance than did the high group consistently over the three-year period. Thus, when considering self-concept, there was no systematic and clear-cut distinction between the two groups. The high group had a better perception of personal health, and the low group had a better perception of personal appearance. The differences in social self-concept were negligible.

TABLE 32

COMPARISONS OF STATED SELF-CONCEPT FOR HIGH AND LOW EMPLOYABILITY GROUPS, YEAR I

	Low	High
Client's perception of his own health		
Strong and healthy	47%	47%
Adequate	13%	29%
Inferior in strength and health	33%	24%
Client's perception of his own appearance		
Feels attractive	33%	6%
Feels adequate	33%	47%
Feels unattractive	20%	35%
Client's perception of self socially		
Popular	40%	47%
Unpopular	53%	35%

Educational Aspirations and Feelings about the Workshop

There were no differences between the high and low groups concerning their educational aspirations during the first year. In each group the majority of subjects was rated as having unrealistic educational aspirations. By Year III, the aspirations of both groups had become somewhat more realistic; however, no clear group differences appeared. There were no group differences in feelings toward the workshop; most of the subjects felt pleased with the shop to some degree. However, the reasons for their feelings toward the shop were related to different facets of the shop experience. Initially, the high group was more interested in acquiring work skills and habits while the low group emphasized the acquisition of social skills. By year three, the feelings toward the workshop of both groups was primarily related to acquiring work and social skills.

TABLE 33

COMPARISON OF EDUCATIONAL ASPIRATIONS, FEELING ABOUT THE WORKSHOP AND JUDGED EMPLOYABILITY FOR HIGH AND LOW EMPLOYABILITY GROUPS, YEAR I

	Low	High
Client's educational aspirations		
Realistic	27%	24%
Beyond possible level	67%	71%
Expects nothing	0%	0%
General feelings toward workshop		
Very pleased	33%	41%
Moderately pleased	40%	35%
Ambivalent	20%	6%
Negative	0%	12%
Feelings toward workshop primarily related to		
Acquiring work skills and habits	13%	35%
Acquiring social skills	20%	0%
Acquiring money	13%	6%
Extras (coffee break, etc.)	0%	0%
More than one	20%	35%
Nothing gained	0%	12%
Can't say	20%	0%
Interviewer's impressions regarding employability		
Confident	20%	65%
Confident after more training	13%	6%
Confident after a change in attitude	20%	12%
Unsure	13%	0%
Skeptical	20%	6%

Probably the most striking difference between the groups is found in the interviewers' impressions regarding employability. Across all three years, the interviewers were confident of immediate employability or employability after more training for the majority of the high group and for only one-third of the subjects in the low group.

Discussion of Environments

When subjects were divided into high and low employability groups on the basis of their Year III production and ratings, they were found to come from characteristically different environments. The high group subjects were from families of predominantly low socio-economic status while the low group was generally more middle-class. The families of the low group were smaller than and intellectually superior to the families of the high group. Approximately half of the high group was Negro; only three of the fourteen low group subjects were Negro.

Particularly surprising was the observation that, given the criteria used most often to assess the relative abundance or deprivation of environments (Bloom, 1964), we would judge the low group as having come from the superior environment. Yet, we have always believed that superior environments lead to superior development, an assertion rather harshly disconfirmed by the present findings.

It may well be that our preconceptions concerning what constitutes a "good" environment are too simple. Two additional factors must be taken into consideration before the excellence of an environment can be evaluated. These are the nature of the developing characteristic which is being environmentally influenced and the nature of the developing organism itself. It is probably true that for the development of academic excellence in individuals of average or above-average intelligence, the environment of the low employability group is superior to that of the high employability group. However, for the development of employability in youngsters of below average intelligence, the opposite may be the case.

The cultural disadvantages of the Negro lower-class youngster have undoubtedly contributed to his academic and intellectual deficit. However, the nature of the disadvantaged environment appears to avoid the subsequent crippling effects of overprotection and isolation which so seriously debilitates vocational development. In contrast, the very same characteristics of the advantaged environment which so often produce academic and intellectual excellence, appear to work against the vocational development of the below-average youngster. The mentally handicapped child is far more exceptional in the middle-class than in the lower-class environment, and is treated as such by family and peers. And exceptional treatment inevitably leads to more exceptional behavior patterns.

The findings of this chapter are important in leading us to a more sophisticated conception of the effects of environments. No environment can be judged on a scale of excellence *in vacuo*. A complex interaction among environment, developing characteristic and nature of the developing organism must always be assumed and hence, investigated.

CHAPTER VIII

PROJECTIVE DRAWINGS

During each of the three diagnostic assessment periods, a group of four drawings was completed by every subject as part of his individual clinical battery of tests. This clinical battery also included the Purdue Pegboard, the Wechsler Intelligence Scale for Children and the Bender-Gestalt Motor Test. The Bender was subsequently analyzed only for the individual case studies.

The instructions given the subjects for their drawings were as follows: In their first drawing, they were asked to draw anything they wished. This first drawing was called the "free drawing." For the second drawing, they were told to draw a person. The sex of the person was not part of the instructions. Next, they were asked to draw a person of the sex opposite that of their previous drawing. Finally, for their fourth drawing, they were asked to draw a family.

Since, at the time, these drawings were considered part of the clinical work-up of each subject, there was no _a priori_ attempt to systematize the concurrent interview in order to render the total verbal and graphic package of the subjects amenable to quantitative analysis. The clinical psychologists were instructed to ask the subjects whether they had drawn the picture before and if so under what conditions, which parts of the picture they liked best and which least, and the reasons for these preferences. They were also asked to identify the figures in their drawings if they either represented or reminded them of people they knew.

Developing a Scoring System

When we turned to the projective drawings as a possible source of empirical data on the self-concepts of our subjects, we found that a number of alternatives presented themselves. First, we could deal with the drawings strictly at the clinical level, and include judgments of the subjects based on a clinical analysis of their drawings into the selected case studies. Second, we could attempt, on the basis of an exhaustive review of the relevant literature, to develop an objective, quantitative scoring system for the drawings produced by the client. This tactic would require that we ignore their accompanying verbalizations except for purposes of case analysis. Third, we could ask clinical judges to examine the pictures produced by our subjects and develop global clinical ratings of self-concept which could then serve as our quantitative measures.

We decided that the second alternative provided the best of both worlds. That is, an objective quantified scoring system would probably be the most reliable means of gaining quantitative data based upon the projective drawings, while we still would have access to these drawings and their accompanying verbalizations for purposes of our more clinical case study analyses.

In order to develop our scoring system we initially did a detailed review of the available literature on the use of drawings by mentally retarded youngsters in making inferences concerning their self-conceptions. This literature review was conducted by two advanced doctoral students in clinical psychology under the supervision of the principal investigator. It must be remembered that the review was conducted during the summer of 1965, and thus it did not contain any of the material published subsequent to that period. On the basis of this review an attempt was made to cull out those principles of objective scoring for the drawings that seemed commonplaces across most of the varied contributors to this field. As will be no surprise to anyone who has read in this field at all, the recommendations of the authorities on children's drawings were far from unanimous in their specifications. The variability of edicts concerning the meaning of aspects of children's drawing was exceeded only by the dearth of empirical validation studies to support those pronouncements. Yet, even then, we could foresee the major problem that would hobble our attempts to make fruitful analysis of self-concept, as it has hobbled earlier attempts. This hobble is the criterion problem.

What is to be one's criterion when attempting to validate the scoring of projective drawings in the study of self-concept? Is it to be the statements subjects make about themselves under minimally constrained conditions, such as in a structured interview? Or are we to put greater credence in their responses to a far more structured self-report inventory? Or are we to ignore what they say about themselves, no matter what the context, and place our trust in the kinds of goals they set for themselves under conditions where there is some risk involved? Or finally, is the best index of a subject's conception of himself his actual productive capacity? The substantive and methodological issues involved in this entire set of questions will be dealt with in far greater detail in a subsequent chapter on the study of self-concept in the mentally handicapped, Chapter XI.

Thus, on the basis of the few commonplaces we could elicit from the literature review combined with some of our own theoretical judgments concerning the manner in which vocational identity might be manifested in the drawings of these adolescents, we constructed a tentative scoring system. The scoring system was purposely quite cumbersome and redundant. Our goal, however, was comprehensiveness rather than brevity on this first draft. We tried to include practically every means of analyzing a child's drawing of a person that might possibly be relevant to his feelings concerning himself. We had already decided that we would focus, for this objective scoring system, only on the second and third drawings, which were consistently of persons. We felt that the first free drawing and the last drawing of a family introduced other complexities that would unnecessarily encumber the already complex problem of developing a scoring system. We thus left these other two drawings strictly for clinical analysis.

After developing this first-order scoring system, a sample of twenty educable mentally handicapped adolescents from a local school district was taken and the battery of four drawings with the accompanying interview was administered to these pilot subjects. The sample of twenty had equal representations of 14 and 15 year olds and males and females. The pilot sample differed from the sample represented in our own longitudinal study only in the absence of Negro subjects from the pilot sample. The drawings produced by these 20 pilot subjects were then scored using our scoring system. Each of the two appropriate drawings was scored for 37 characteristics which then served as scoring items. These scores were then intercorrelated and the resulting matrix was factor analyzed using a varimax rotation. The scoring system is reproduced in full in Appendix D.

As we had expected, the redundancy that we had intuitively expected to a great extent was discovered. A number of items could be removed from the scoring system because of the fact that other items were apparently picking up the same characteristics. On the basis of our examination of both the intercorrelations and the factor analysis, the items in Appendix Dwhich are marked by an asterisk were identified as the final scoring categories. There were 17 such items.

When this final scoring system had been developed, the 218 drawings of persons made by the 36 subjects who remained for the entire study were prepared for scoring. In order to do so with a minimum of scoring bias, identification numbers and accompanying verbalization protocols for each picture were removed and all the pictures for all the subjects for all the diagnostic periods were randomly ordered in one large pool. Thus, pictures produced by subjects during each of the three years of the study were scrambled in the same pool in order to protect against any possible scoring bias. These drawings were all scored using the revised scoring system and the score for each drawing was then transferred to a permanent scoring sheet by someone other than the person who did actual scoring. The scoring of all drawings was completed by a single rater. We have reason to believe that the scoring was reliable; evidence for which comes from the rather high stability coefficient between the first and third year drawing scores of .55. This is obviously a minimum estimate of the scoring reliability, since changes were probably taking place in the subjects over the course of that time period. The scores for each of the two pictures drawn by each subject annually were combined to arrive at a single drawing score which purported to measure the subject's projected self-conception of his own instrumental or vocational competence.

Analysis of Drawings

Table 34 reports the stability coefficients for the scores generated by the drawings of our subjects. These coefficients are

TABLE 34

STABILITY OF PROJECTIVE DRAWINGS

	N = 36[a] Year 1-Year 2	N = 35 Year 2-3	N = 36 Year 1-3
Total	.42	.61	.55
Picture 1	.46	.54	.49
Picture 2	.11	.40	.38

[a] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (two-tailed)

reported for both the total score as well as the individual scores on the two contributing drawings for each year. It can be seen that the total score for the two drawings is most stable while the individual contributing scores are less so. The correlation between Year I and Year III of +.55 is not earthshaking, but when dealing with a realm as potentially ephemeral as the scoring of adolescent drawings, it is a rather remarkable testimony to the reliability of the scoring system as well as to the stability of the behavior of those whose work is being scored.

The stability coefficient was low enough to allow for some speculation that systematic change may have taken place over time. The first comparison was logically between the experimental and control groups. Table 8 has already reported the means, standard deviations and corresponding values of F and p for the comparison of experimental and control group means. These differences show no superiority for either group over the other. Furthermore, they show that no consistent rise in the drawings scores is discernible over the three years.

The next question concerns the relationship between scores on the projective drawings and all other basic variables in the study. Table 35 reports the correlations between total drawings score and each of the other variables for the three years of the study. The results are remarkably uniform. Without a single exception, no correlation coefficient reaches a value which would be considered significant at the 5% level. The values of the correlations vary around .00, half of them positive and half negative.

TABLE 35

CORRELATIONS BETWEEN DRAWINGS SCORE AND OTHER VARIABLES FOR EACH YEAR OF STUDY, TOTAL GROUP

	N = 36[a] Year I	N = 35 Year II	N = 36 Year III
Self-Concept	.04	.10	-.23
Level of Asp.	-.14	-.19	.01
Aspiration Index	-.08	.003	-.12
Purdue	.02	.06	.22
Vineland	-.17	-.17	.08
WISC IQ	-.03	-.04	.22
WISC Verbal	.06	-.04	.09
WISC Perf.	-.11	-.01	.16
Chicago IQ	.08	----	----
Production	.08	-.27	.10
Ratings	-.12	-.06	.17
Employability	.15	-.10	.16

[a] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (two-tailed)

Comparisons of High and Low Employability Groups

Table 15 reported the comparison of high and low employability groups on drawing scores. Once again, we find no meaningful differences between these two groups on these scores. It was becoming increasingly clear that, for all of the many months of effort which had gone into developing a scoring system and evaluating the drawings, they were exhibiting no systematic relationship with any of the other variables or distinctions being used in the analysis of the data for this study.

A final attempt to identify the relationship between scores on drawings and other variables was made at the level of individual items. The scores of the high and low employability groups on each scoring category of the drawings for each picture in each of the three years of the study were compared and statistically evaluated. Clearly, only consistent and replicated differences could be given any attention at all, since this analysis involved approximately 100 comparisons. When this analysis was performed, no consistent interpretable differences emerged.

Discussion of Drawings

The attempts made to analyze the drawings of our subjects and relate these to the other patterns of relations that we had identified resulted in the only uniformly fruitless portion of this study. In almost every other case, we had been able, through careful analysis of relations or identification of changes, to extract meaningful relationships which could be brought to bear upon our understanding of vocational development in the retarded. We had had high hopes that analysis of these projective drawings would similarly bear fruit. Unfortunately, this was not to be the case.

What might account for this lack of relationship? It is possible that we chose the wrong strategy of analysis for the present sample. It is conceivable that a global clinical analysis by individual case might have been more fruitful than the more objective scoring analysis which we chose as our strategy. It is also possible that the drawings could not be interpreted uniformly using the same scoring criteria. That is, as implied in an earlier section of this chapter, it is likely that these drawings represented a range of projections and non-projections on the part of our subjects. Some may truly have been projective drawings wherein the subject injected his own image of himself. Others may have been merely innocuous, bearing no relationship at all to any of the subject's personal feelings. Still others may have truly been projections, but of ideal rather than real feelings concerning the self. Finally, a good deal of unreliability may have been injected because of the discrepancy between what a person feels and may wish to put on paper and his actual ability to translate these feelings into a graphic art form. There is no question that the retardation of our subjects involved many of them psychomotorically and for these, production of drawings was a rather difficult venture. It is thus conceivable that any possible systematic relationship between self-conception and drawing behavior was masked by a second variable, namely ability to draw, which cut across both high and low self-concept individuals indiscriminately.

Whatever the reasons, our attempts at using projective drawings to aid in the understanding of the vocational development of mentally handicapped adolescents had met with failure. A further attempt will be made in Chapter XI when we shall examine the role of drawings as part of self-concept patterns, involving the other self-concept variables, viz., level of aspiration, Aspiration Index, Self-Concept Scale and Interview.

CHAPTER IX

LEVEL OF ASPIRATION

Many psychological theorists consider level of aspiration a pivotal construct. A wide variety of psychological and motivational theories are rooted in level of aspiration as either a methodological or conceptual keystone. Chief among these is the theory of level of aspiration discussed in the classical paper by Lewin, Dembo, Festinger and Sears (1944). This paper stimulated or foreshadowed the theories of achievement motivation developed by McClelland, Atkinson and others (1953), Festinger's (1957) theory of cognitive dissonance and much contemporary work in decision-making, such as that of Edwards (1954). Finally, recent studies of cognitive functioning, as exemplified by the work of Bruner, Goodnow and Austin (1956), have involved some application of the methods and theories of level of aspiration research.

What is the general level of aspiration paradigm? A subject is given a task to perform and sufficient time to establish a baseline level of accomplishment for that task. Subsequently, he is given a second opportunity to work on the same task and is asked, with his prior achievement before him, to set a personal goal for the next session.

Generally, he can set three kinds of goals for himself. First, he can set as his goal precisely what he was able to do in his last effort. We shall call this subject the realist. Alternately, he may set a goal for himself that is less than his last accomplishment. We shall call such a choice that of a pessimist. Finally, he may set a goal for himself that exceeds his last previous effort, and to him we shall give the name optimist. Clearly, optimists and pessimists can be classified by the magnitude of their deviations from past performances as well as their direction.

Although much experimental research with level of aspiration has suggested that it may be highly task specific, many personality theorists, such as Sears (1940), have come to discuss level of aspiration as if it were a very stable personality trait. Other theorists, such as Atkinson (1965), recognize that goal-setting behavior is a somewhat more complex phenomenon. For Atkinson, the goal-setting behavior of an individual is a function of the multiplicative relationship among his motivational state, the incentive value of the task and his expectancy of success (M x I x E). Clearly then, although the motivational state and incentive value of a given task ought to remain relatively stable within the same setting, expectancy of success ought to vary fairly substantially with immediate and long-range history of success and failure. Since these relations are multiplicative, variations in expectancy of success may lead to rather high variability in the goal-setting behavior of the subject.

The level of aspiration data of this study are unique in two ways. First, the data are longitudinal, spanning more than two years of each subject's life over three diagnostic assessment periods. Second, the levels of aspiration were set by the subjects for five consecutive days during each diagnostic period and reflected the goals set over a range of different tasks. Thus, we can now examine the consistency of goal-setting over time and across tasks.

Many of the investigators who study level of aspiration in a one-shot manner seem to assume that this variable would operate in a trait-like manner even with the introduction of task variation. We will now be in a position to judge the extent to which this assumption is well founded. In addition, we will examine the extent to which the ratio of aspiration to previous production is an adequate measure of the personality characteristic ostensibly underlying goal-setting behavior.

In the present study, level of aspiration was measured in the following manner. Subjects came into the diagnostic assessment workshop between 8:45 and 9:00 a.m. and punched in on a timeclock at the time of arrival. At 9:00, they received instructions on the task they were assigned to do that day and began working. The period from 9:00 to 9:30 was considered the break-in period. From 9:30 until 10:30 was the first work period. As far as the subjects were concerned, there was no signal distinguishing the break-in period from the first work period, although the foremen who were supervising their work always made it a point to note their level of production at 9:30 in order to make it possible to assess accurately the amount produced during the first work period. At 10:30, the subjects took a 15-minute break, during which their first hour production was noted. When they returned for work at 10:45, a foreman approached each subject with the following question: "During the last hour before the break you were able to make _____ pieces. How many do you think you can make during the next hour?" The goal or prediction set by the client was his level of aspiration for that day's work.

These aspirations were transformed daily into a ratio of level of aspiration to production. Thus, if a subject produced 100 units in the first hour and subsequently set a goal of 150 for the second hour, his level of aspiration for that day was 1.50. At the end of the diagnostic week, his daily levels of aspiration were averaged to generate the summary score for that diagnostic period, the average level of aspiration ratio.

This method of analysis is perfectly reasonable if level of aspiration tends to be a rather stable trait with reasonable degrees of variability about the mean. On the other hand, if a particular average level of aspiration ratio has resulted from one widely optimistic pattern, two mildly pessimistic patterns and one realistic pattern, the weekly average will appear moderately optimistic but will fail to reflect even a single actual aspiration level manifested by the subject. It is for this reason that in the following sections we shall examine a variety of ways of looking at level of aspiration patterns in our subjects, including traditional ratios or discrepancy scores, global ratings of patterns on a scale of psychological health, analyses which combine evaluations of aspiration level with general level of productivity, analyses based upon number of particular patterns noted rather than quantitative summations of their values, and others.

Stability and Relations with Other Variables

It will be recalled that the level of aspiration ratios were moderately stable over the course of the study. Correlations between Year I and Year III were +.43 for the combined groups and +.77 and +.58 respectively for the old and new groups. The level of aspiration scores generally had the lowest "real" stabilities of any variables in the study. The only variable which had a lower apparent stability was Ratings, but this instability was due to Year I unreliability and has been dealt with in Chapter V. This moderately low stability for level of aspiration ratios suggested to us that they may be undergoing change in a manner not characteristic of the other variables in the study.

We had begun the study with a rather simple-minded point of view. The more optimistic one's level of aspiration, we thought, the more advanced is his vocational development. Yet, two kinds of experiences ought to have sensitized us to the possibility that such simple expectations might be inappropriate. First, we had long been familiar with the work of Atkinson (1965) on the motivational determinants of risk-taking behavior. The setting of a level of aspiration clearly falls within the domain of risk-taking behavior. Atkinson has pointed out and demonstrated empirically that there are two fundamental ways of coping with one's anxiety over achievement. The first is to set levels of aspiration which fall far below what one thinks he can really accomplish. The second is to set levels of aspiration that far outstrip one's capacity. Under either condition, it is all but impossible to experience failure. If one has set his level of aspiration extremely low, it is practically inevitable that his attainment will surpass that goal. Conversely, if he sets it impossibly high, it is clear that neither he nor anyone else could possibly have reached such an unrealistic goal, thus anyone would have failed. Ergo, he has not failed either. Thus, Atkinson's model should have led us to test the possibility that there would be a curvilinear relationship between employability and level of aspiration ratio. That is, those who were most employable would set moderate levels of aspiration while those who were least employable would tend toward the extremes of the distribution.

A second experience should have confirmed that expectation. During the summer of 1961, the pilot study for this longitudinal probject was conducted. Most of the instruments to be used in the actual study were administered on an experimental basis during that summer. Two or three of the subjects in that pilot study consistently set levels of aspiration that fell considerably beyond any possibility of attainment. They clearly fell into what we called our "dreamers" category. Though not aware of their levels of aspiration, the clinical psychologist responsible for the psychological work-ups on our subjects that summer indicated to us that each of these "dreamer" subjects showed clear signs of psychotic functioning. They were very much out of touch with reality. Their "dreamer" level of aspiration patterns were independent corroborations of this lack of contact. Hence, we had another clue, had we but attended to it, to suggest that the simple magnitude of the level of aspiration ratio is not an appropriate measure of the adaptability of that pattern.

TABLE 36

TOTAL GROUP CORRELATIONS WITH LEVEL OF ASPIRATION FOR EACH YEAR OF THE STUDY

	Year I (N = 55)[a]	Year II (N = 44)	Year III (N = 36)[b]
Drawings	-.14	-.19	.01
Self-Concept	.33	.22	.19
Aspiration Index	.72	.56	.12
Purdue	-.36	-.51	-.34
Vineland	.13	-.23	-.22
WISC IQ	-.01	-.22	-.25
WISC Verbal	.03	-.17	-.07
WISC Perf.	-.05	-.25	-.28
Chicago IQ	.00	----	----
Production	-.20	-.18	-.29
Ratings	-.24	-.37	-.47
Employability	-.33	-.63	-.44

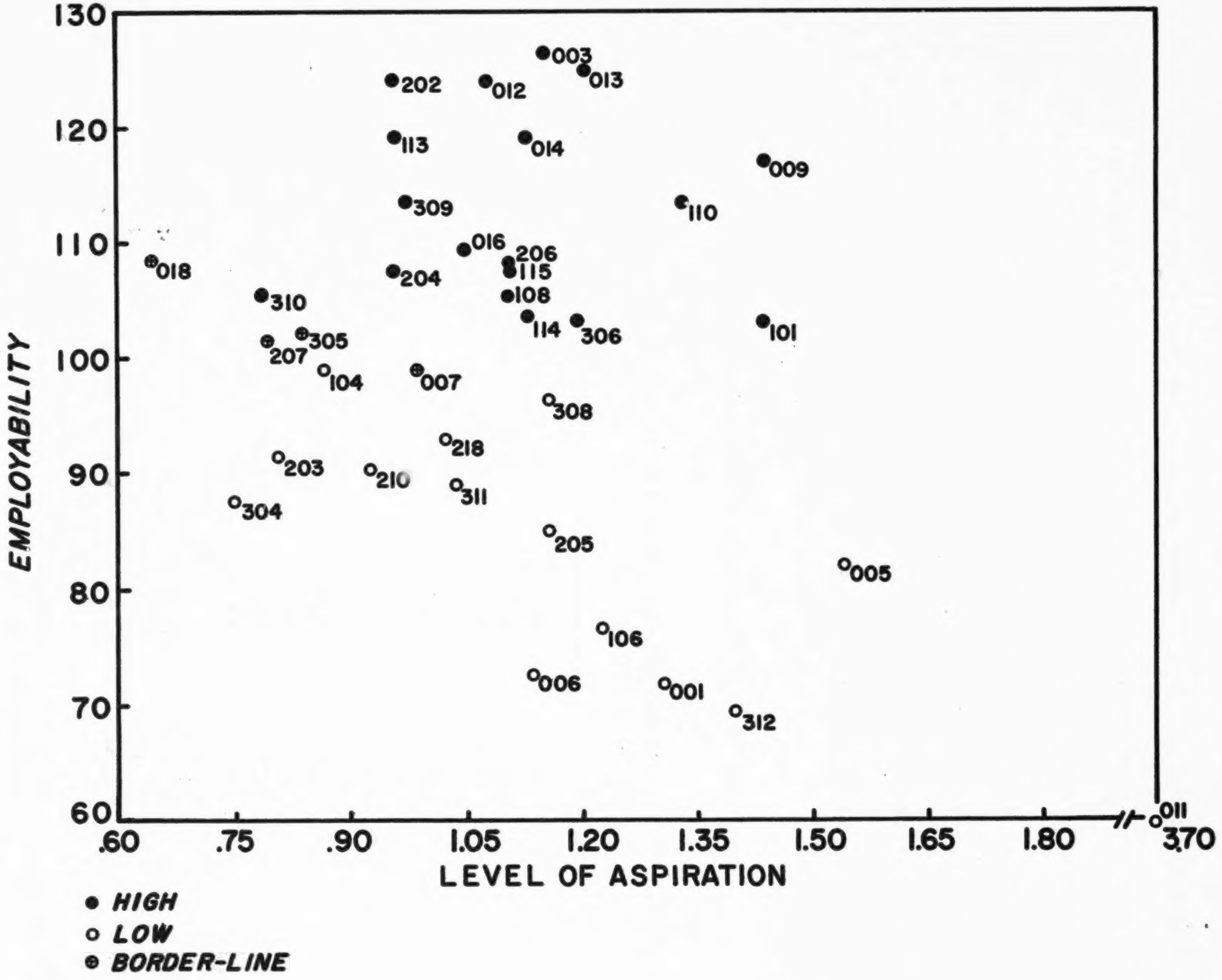
[a] For N = 55, an $\underline{r} \geq .26$ will occur by chance 5% of the time; an $\underline{r} \geq .34$, 1% of the time (two-tailed test).

[b] For N = 36, the corresponding values of $\underline{r}$ are .34 and .43. (two-tailed)

We were thus somewhat unprepared for the finding reflected in Table 36 that, across the years of the study, the level of aspiration variable reflects consistently negative correlations with our cluster of "competence" variables. The ratio had demonstrated itself to be moderately stable, though far less so than most other variables in the study. Yet, the magnitude and direction of its correlations with the other variables in the study made little sense. That it should manifest a significant negative correlation with employability posed a troublesome puzzle.

Figure 22

SCATTERPLOT OF EMPLOYABILITY AND LEVEL OF ASPIRATION FOR HIGH AND LOW EMPLOYABILITY GROUPS; THIRD YEAR



Furthermore, examination of Table 15 had indicated that the low employability group had significantly higher average level of aspiration ratios than did the high employability group during the first and third years of the study. We also noted that the standard deviation of the low group was twice that of the high group in Year I (.539 as against .266) and almost five times larger in Year III (.73 and .151). It was this last observation that served as a most important clue to the understanding of level of aspiration.

Breaking the Level of Aspiration Code

Our next step in this analysis was to attempt two rather different approaches to this variable. We now considered it a code which must be broken. Our faith that level of aspiration patterns were a meaningful and potentially invaluable index of vocational development led us to press forward with an analysis of its meaning.

Our first attempt at understanding further the behavior of the level of aspiration score was to scatterplot the relationship between level of aspiration average ratio and employability for Year III of the study (Figure 22). We were immediately struck by two clear observations. First, the scatterplot did not appear to be that of two variables with a moderately high negative correlation. Instead, the pair of variables seemed to be related in a somewhat pyramidic fashion. That is, it appeared that the high employability group tended to cluster about the center of the plot, while the low employability group was much more spread out and tended toward either extreme. What appeared to render the overall correlation negative were two extreme scores at diagonally opposite corners of the plot. Thus, it appeared possible that the scattergram would have otherwise generated a correlation near .00, except for the presence of Subjects 018 and 011 who occupied the top left and bottom right portions of the plot respectively. Subject number 011, especially, maintained a position which was extremely out of line with those of her peers. This possibly pyramidic relationship would, of course, follow directly from Atkinson's expectations of curvilinearity.

TABLE 37

COMPARISON OF AVERAGE SQUARED DEVIATIONS FROM A THEORETICALLY OPTIMAL 1.10 LEVEL OF ASPIRATION FOR HIGH AND LOW EMPLOYABILITY GROUPS

Group	Average Squared Deviation from 1.10 (D^2)	(13, 17)	P
High Employability (N = 18)	.0525	4.97	$<.005$
Low Employability (N = 14)	.2608		

In order to confirm this observation, we conducted an analysis of the extent of the deviation of each subject's average level of aspiration from a theoretically optimal point. We determined, on an a priori basis that an average level of aspiration of approximately 1.10, reflecting moderate optimism, would be the theoretically healthiest level of aspiration that could be set by a subject. This was also very close to the actual third year average for the entire combined group, which was 1.14. Table 37 reports an analysis of the deviations from the theoretically optimum 1.10 level for the high employability and the low employability groups respectively. The deviations of each subject from this optimal point were computed and squared to correct for differences in sign. These squared deviations, when divided by the respective sample sizes, could then be treated as variances. The significance of the differences between the variances could then be tested as with any F ratio. In order that the variance for the low employability group would not be thrown totally out of line by the extremity of the position of subject 018, her actual deviation of 2.60 was corrected to .90. This left her the most extreme deviation in the group, which was accurate, but did avoid allowing her score to distort the overall pattern of the results.

It is clear from Table 37 that the difference between those two variances is highly significant. Thus, we observed that the group which is high on employability tends to set much more moderate levels of aspiration than the group which is low on employability.

Having asserted that proposition, we were confronted by a new doubt. Was it possible that this observation of moderate levels of aspiration ratios for the high employability group as against extreme ratios for the low employability group was an inevitable statistical artifact? It will be recalled that the index of employability was derived by summing across standard scores for both production and diagnostic ratings. The correlations of each of these contributing sources with the Employability Index was approximately +.85. The level of aspiration ratio used the production score as its denominator, i.e., level of aspiration/production. Herein lay the danger. The high and low employability groups were significantly different in production, which was the denominator of the ratio on which we were now comparing them.

We were thus taken by the following possibility. It seemed quite conceivable that, in psychological terms, what determined the reality of a goal set in the light of a previous attainment was not the proportional relationship between the new goal and the antecedent achievement, but rather the absolute magnitude of the difference. That is, if Person A has produced 100 units and Person B, 50 units during a previous period, it is psychologically equally risky for either to set a new level of aspiration which exceeds the prior production by 20 units. However, in this example, Subject A, who has produced 100 units and subsequently aspires to produce 120, scores a level of aspiration ratio of 1.20. In contrast, Subject B, who follows his production of 50 units with an aspiration of 70, receives a level of aspiration ratio of 1.40. This occurs even though it may be that psychologically the two aspirations were perceived as equally risky by those who made them. Hence, the lower one's productivity, and thus employability, necessarily the more extreme will be his level of aspiration ratios, because of the fact that the denominator of the ratio will be smaller. Conversely, the higher one's average production, the more moderate his level of aspiration ratios.

The level of aspiration ratio, which we had hitherto seen as so intuitively meaningful, was now a potential problem. Even though we felt that, in objective terms, a ratio of 1.20 for a high producer was as difficult to attain and as risky a goal as that same ratio for a lower producer, an additional analysis of the data was in order. We determined to re-analyze the squared deviations from an ideal point in a manner that would correct for the distorting effect of the ratios.

Using the third year data once again, all first-hour production figures were converted into standard scores with a mean of 50 and a standard deviation of 10. The subsequent level of aspiration for each day was converted into another standard score using the same mean and standard deviation as had been used to convert the first-hour production data. The absolute magnitude of the standard score difference between first-hour production and subsequent level of aspiration now produced a deviation score which was not affected by the distortion as were the ratios discussed earlier. These new deviations were then summed arithmetically across the days of the diagnostic period in order to derive a single average deviation score. Figure 23 is the scatterplot of those average deviation scores against the Employability Index. One can observe immediately that a major effect of correcting for the distortive effects of the ratios is to draw in the extreme tails of the distribution and mask the apparent curvilinearity of the relationship. In order to test the same hypothesis we had tested earlier using the ratios, we recalculated a squared deviation analysis using 1.10 again as the _a priori_ optimal level.

Table 38 reflects the resulting findings. As expected, the ratio of the two variances is no longer as striking. Yet, there is still a difference. When we compare the variance of the low employability group

Figure 23

SCATTERPLOT OF EMPLOYABILITY AND CORRECTED DEVIATION LEVEL OF ASPIRATION SCORE FOR HIGH AND LOW EMPLOYABILITY GROUPS; THIRD YEAR

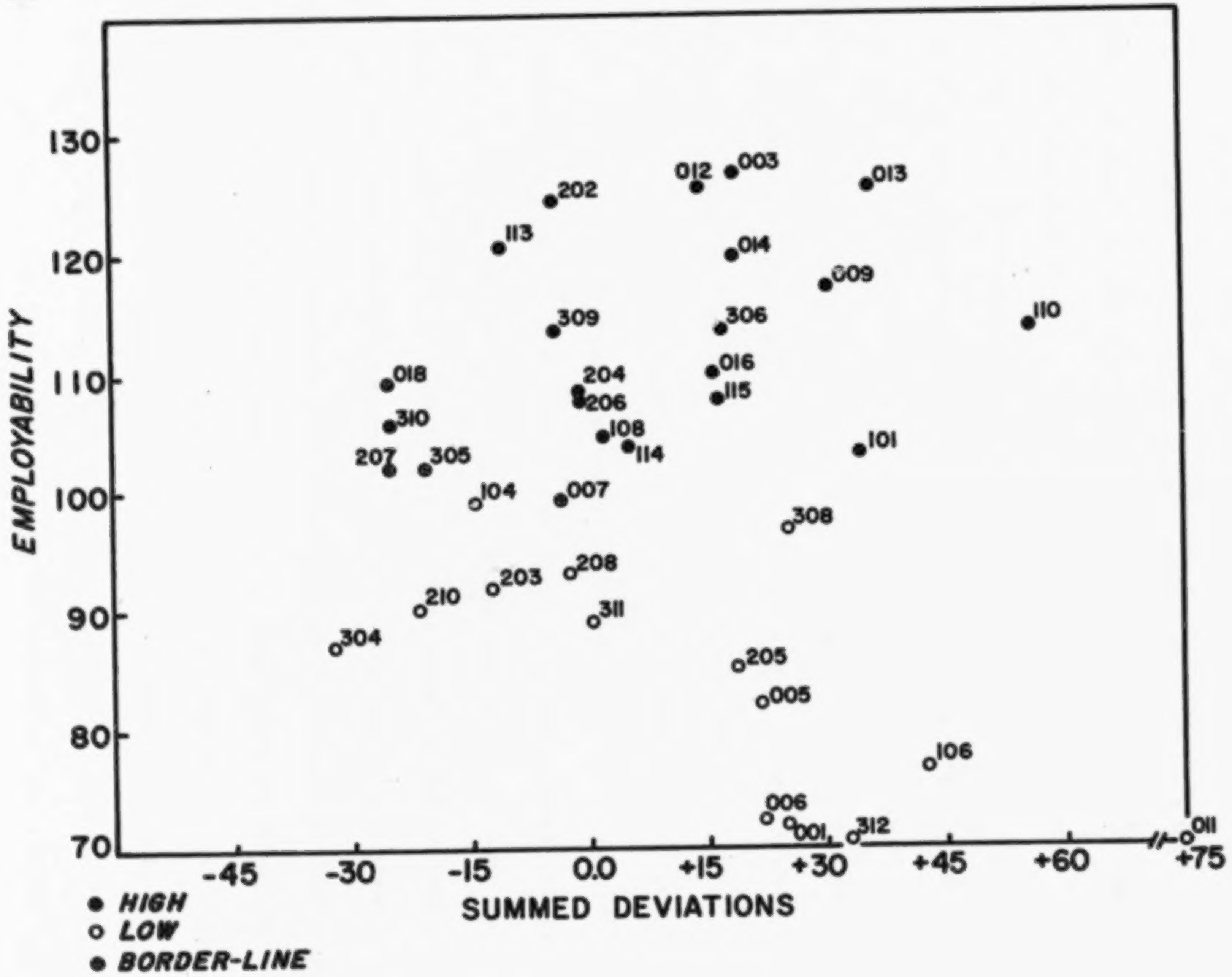


TABLE 38

COMPARISON OF STANDARDIZED AVERAGE SQUARED DEVIATION FROM A THEORETICALLY OPTIMUM 1.10 LEVEL OF ASPIRATION FOR HIGH AND LOW EMPLOYABILITY GROUPS AND BORDERLINE SUBJECTS

Group	Ave. D^2	F	P
N = 18 High Employability	90.76		
N = 14 Low Employability	191.00	2.10	$<.10$
N = 18 Low and Borderline Employability Combined	199.485	2.20	$<.06$

Note: This table summarizes two comparisons. The first value of F is for the comparison of the High and Low Employability Groups. The second value of F is for the comparison of the High Group with a combined Low and Borderline Employability Group.

to that of the high employability group, the resulting value of F is significant at less than the .10 level. When we now include in the low employability group those four borderline subjects who were hitherto uncategorized, thus creating two equal-sized groups of 18 subjects each, the resulting ratio now has an F value significant at less than the .06 level.

What can be derived from this analysis? We were initially misled concerning the magnitude of the differences between the level of aspiration patterns of the high employability and low employability groups by a statistical artifact created when ratios were used. However, when the correction was made creating the most conservative possible comparison, wherein it was assumed that psychological reality is represented solely by the magnitude of the differences between aspiration and prior attainment and not at all by the proportionality, a discernible difference between the two groups yet remained. It can still be asserted that members of our high employability group set more moderate levels of aspiration than did members of our low employability group, whose aspirations were either negatively or positively more extreme.

Level of Aspiration: The Aspiration Index

An additional analysis was now conducted using the level of aspiration data. We felt that it would be useful to categorize the observed daily level of aspiration patterns for individuals into discrete groups. We would define a level of aspiration pattern as a particular relationship among three values: The production for the first hour, Production A, the level of aspiration set for the second hour, and the actual subsequent production for the second hour, Production B. Table 39 lists the 13 level of aspiration patterns which we identified *a priori* as the most likely to be exhibited by our subjects. The value 100 is arbitrarily set as Production A, and all subsequent values relate to that base line. Thus, Pattern B, 100-150-200, is a level of aspiration pattern in which the subject sets a goal which is optimistically above his previous production, and in the subsequent production period exceeds his optimistic goal.

TABLE 39

THIRTEEN LEVEL OF ASPIRATION PATTERNS USED IN THE CALCULATION OF THE ASPIRATION INDEX

	Pattern	Rank Value	Prod. A	Level of Asp.	Prod. B
Optimistic	A	13	100	150	150
	B	12	100	150	200
	C	11	100	200	150
	D	10	100	150	100
	E	7	100	150	50
Realistic	F	9	100	100	150
	G	8	100	100	100
	H	6	100	100	50
Pessimistic	I	5	100	50	150
	J	4	100	50	100
	K	3	100	50	75
	L	2	100	50	50
	M	1	100	50	25

It will be noted that the first five patterns, A-E, are all optimistic aspirations with varying subsequent productions. Patterns F-H are realistic patterns and patterns I-M are pessimistic patterns.

Having made these designations, we made a further, somewhat arbitrary decision. We would consider the sequence from A through M as reflecting a decreasing rank order of "healthiness" of aspiration pattern, wherein Pattern A was the healthiest possible level of aspiration pattern and Pattern M the least healthy. We then assigned these patterns values ranging from 1 through 13, as reported in Table 39. Each subject's aspiration pattern for each day of every diagnostic period was then given a score corresponding to its rank value. Those scores were then averaged for each subject's annual diagnostic period. The resulting average score, which reflected how high on the scale of "healthy aspiration patterns" the subject tended to be, was called the Aspiration Index.

The Aspiration Index differed from the level of aspiration ratio in two ways. First, it was maximally sensitive to whether a subject was optimistic, realistic or pessimistic, rather than to the magnitude of that aspiration. Second, it took into consideration the subsequent production of the subject and how that reflected on the general realism of the goal which had been set. Also, because it ignored the magnitude of aspirations, the Aspiration Index was less susceptible to gross distortion attributable to a single extreme goal set on a particular day.

The histograms in Figures 24 through 26 reflect the distribution of the incidence of each aspiration pattern for each year of the study using all of the subjects who remained for the entire duration of the program (N = 36). It can immediately be seen that changes are occurring over the course of the program, generally reflected in a shift from less to more optimistic patterns. But who is changing and in which directions? This question can be answered in two different ways. We can examine changes in Aspiration Index scores for various subgroups

Figure 24

PROPORTIONAL FREQUENCIES OF EACH OF 13 LEVEL OF ASPIRATION PATTERNS FOR COMBINED GROUPS DURING ALL THREE YEARS OF PROGRAM

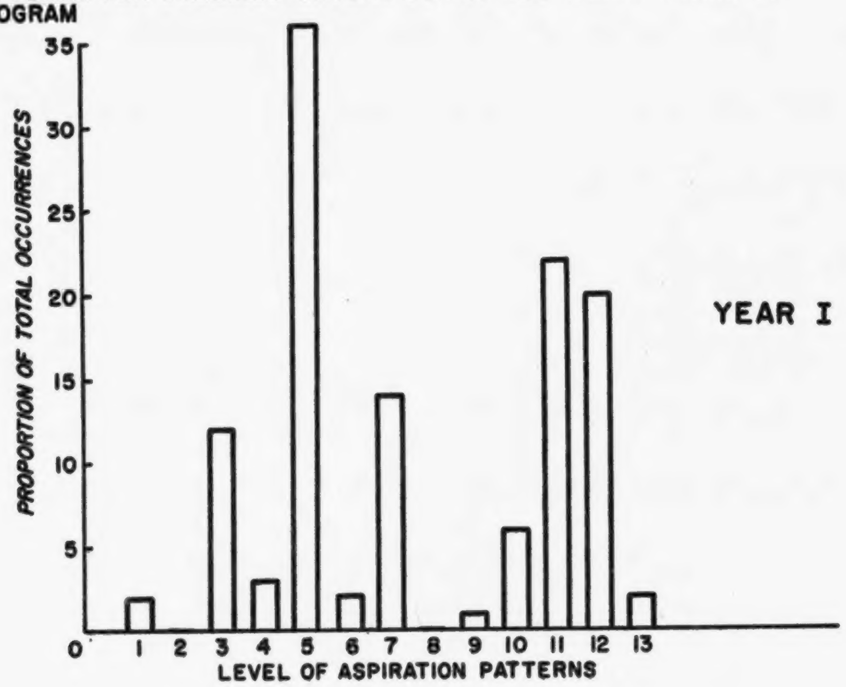


Figure 25

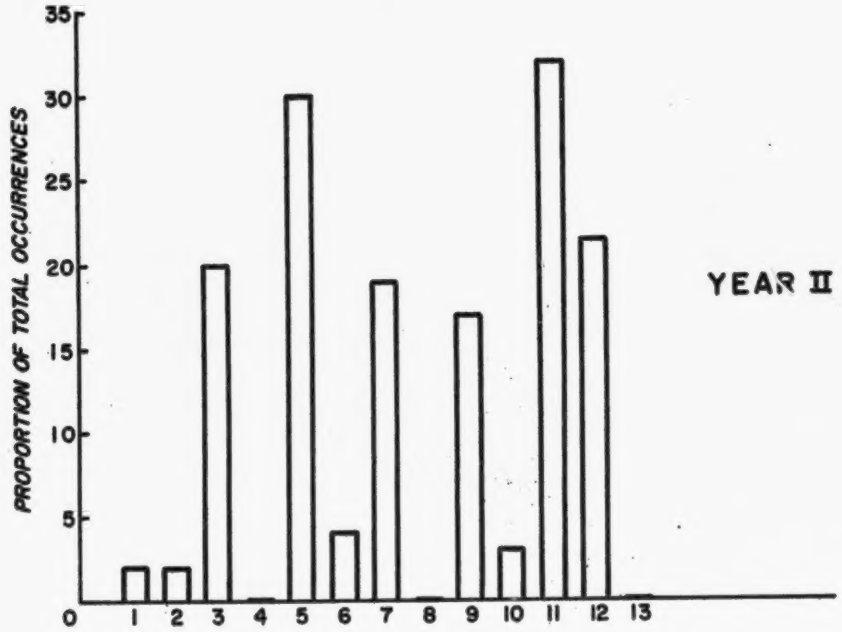
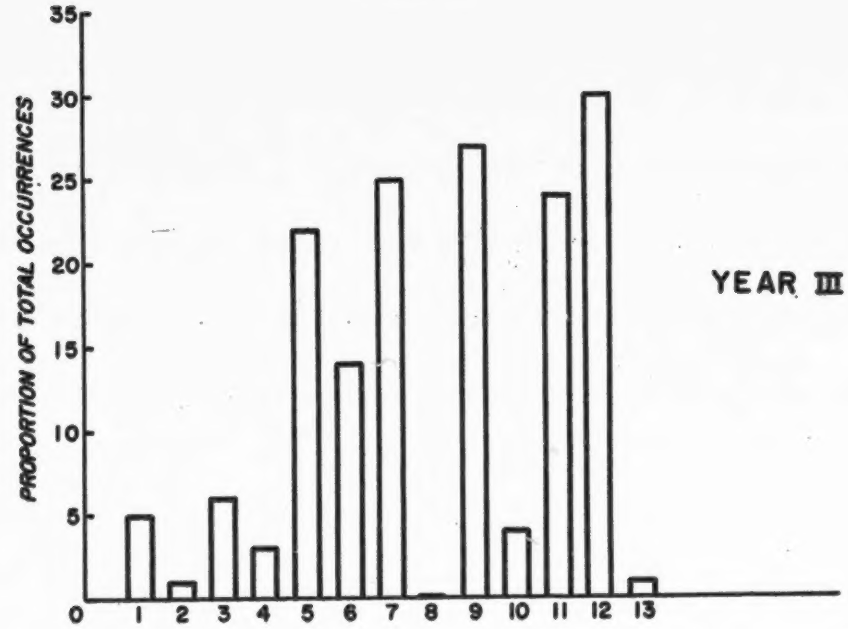


Figure 26



over time. Alternatively, we can study changes in groups of aspiration patterns for different kinds of subjects. We shall begin by examining the correlational data.

TABLE 40

TOTAL GROUP CORRELATIONS WITH THE ASPIRATION INDEX FOR THE THREE YEARS OF THE STUDY

	Year I (N = 36)	Year II (N = 35)	Year III (N = 36)
Drawings	-.08	.00	-.12
Self-Concept	.22	.11	.14
Level of Asp.	.72	.56	.12
Purdue	-.31	-.23	-.07
Vineland	.00	-.02	.23
WISC IQ	-.04	.07	.20
WISC Verbal	.01	.14	.43
WISC Perf.	-.05	.00	.02
Chicago IQ	-.07	----	----
Production	-.14	-.07	.00
Ratings	-.14	-.03	.32
Employability	-.25	-.20	.19

Note: For N = 35, an *r* $\geq$ .34 will occur by chance 5% of the time; an *r* $\geq$ .44, 1% of the time. (Two-tailed test)

Table 40 reports the correlations between the Aspiration Index and other major variables for each year of the study. During the first year of the study, the Aspiration Index bears either a zero-level or slightly negative correlation with most other variables. An exception is level of aspiration with which it has a high positive correlation. By the third year a major change has taken place. The Aspiration Index now correlates nearly zero with the level of aspiration average ratio, while its correlations with the other variables are either zero or moderately positive. Since we had already observed that the stability of the level of aspiration ratio was moderately high, it was no great surprise to find that the stability coefficient for the correlation between first and third year Aspiration Index was .00. This tended to corroborate the message of Figures 23-25, that change was taking place in the patterns of aspiration being set by our subjects.

It is a rather complicated task to attempt to compare groups across 13 possible patterns. We thus determined to simplify the matter somewhat by grouping the patterns into three categories: Namely, optimistic patterns, A-E, realistic patterns, F-H, and pessimistic patterns, I-M. We then examined the relative frequencies of each of these three patterns for our experimental and control groups and then, for our high employability and low employability groups.

Table 41 reports the comparison of the experimental and control groups on the incidence of optimistic, realistic and pessimistic patterns for each year. If there is change taking place across years, it is not reflected in this comparison.

Table 42 reports the comparison of high employability and low employability groups for each year on their proportion of optimistic, realistic and pessimistic levels of aspiration respectively. Here a distinctive pattern emerges which also seems to explain the instability of the Aspiration Index, as well as its movement from negative to positive correlation with such variables as employability. It appears from Table 42 that the high employability group began Year I with less optimistic and more pessimistic levels of aspiration, while the low

TABLE 41

COMPARISONS OF PROPORTIONAL FREQUENCIES OF OPTIMISTIC, REALISTIC AND PESSIMISTIC LEVEL OF ASPIRATION PATTERNS FOR EXPERIMENTAL AND CONTROL GROUPS OVER THREE YEARS[a]

Group	Experimental (N = 16)			Control (N = 20)		
Years	Opt.	Real.	Pess.	Opt.	Real.	Pess.
Year I	59.0	3.27	37.63	48.02	7.78	44.13
Year II	63.5	4.05	32.42	57.12	2.59	40.24
Year III	58.8	2.27	40.90	51.33	4.05	44.58

[a] All numbers in the table are percentages of the total number of aspirations set by the group during a particular diagnostic period.

TABLE 42

COMPARISONS OF PROPORTIONAL FREQUENCIES OF OPTIMISTIC, REALISTIC AND PESSIMISTIC LEVELS OF ASPIRATION PATTERNS FOR HIGH AND LOW EMPLOYABILITY GROUPS OVER THREE YEARS[a]

Group	High Employability (N = 18)			Low Employability (N = 14)		
Years	Opt.	Real.	Pess.	Opt.	Real.	Pess.
Year I	45.3	14.1	40.7	58.8	14.3	26.7
Year II	53.5	15.5	31.0	56.2	15.8	28.1
Year III	63.3	24.3	12.0	49.0	23.0	27.6

[a] All numbers in the table are percentages of the total number of aspirations set by that group during a particular diagnostic period.

employability group began with exactly the opposite pattern. Subsequently, while the low employability group became only moderately less optimistic, the high employability group made a radical shift.

Figure 27 reflects this relationship through histograms, with the marked shift of the high employability group over the three measurement periods being quite graphically represented. Yet, another way of representing the shifts is through use of the Aspiration Index score. Figure 28 reports the changes in the average Aspiration Index for the high and low employability groups across the three years of the study. In congruence with the picture presented by the histograms, the average Aspiration Index for the low employability group is higher than that of the high group at the beginning of the first year. The significance of the value of F for the difference between the groups at that point is less than .11. By the second year of the study the Aspiration Indices of the two groups have become essentially identical. By the third year of the study the lines for the Aspiration Indices of the two groups have completely crossed, with the high employability group now having a significantly higher Aspiration Index than the low employability group. The significance of the value of F for that difference is less than .07. There has clearly been a significant change in the healthiness of the level of aspiration patterns of the high and low employability groups over the course of the study as reflected in their respective Aspiration Indices. We will discuss fully the implications of these changes and the other characteristics of level of aspiration patterns in the final section of this chapter.

Figure 27

COMPARISON OF PROPORTIONAL FREQUENCIES OF OPTIMISTIC, REALISTIC AND PESSIMISTIC LEVEL OF ASPIRATION PATTERNS FOR HIGH AND LOW EMPLOYABILITY GROUPS OVER THREE YEARS

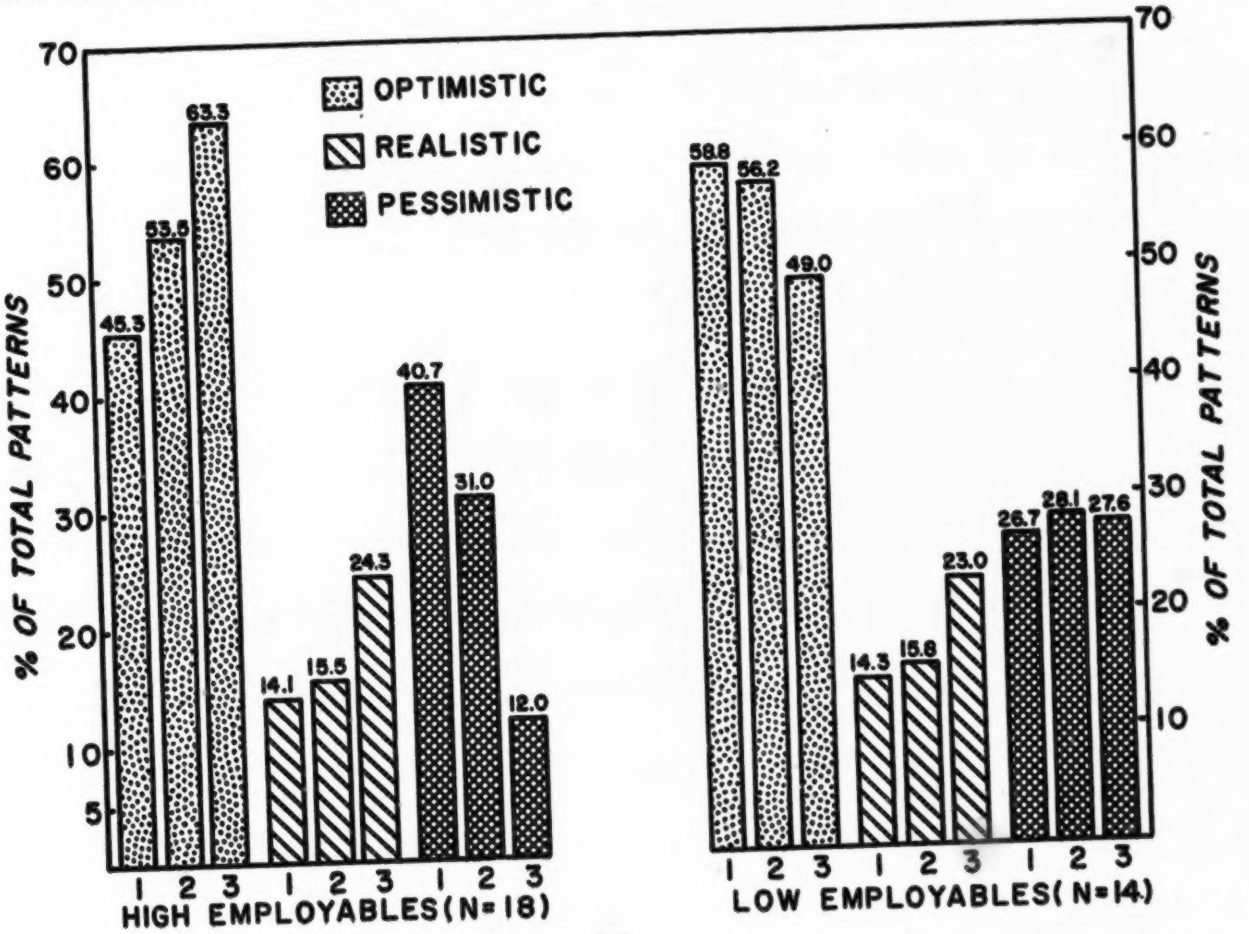
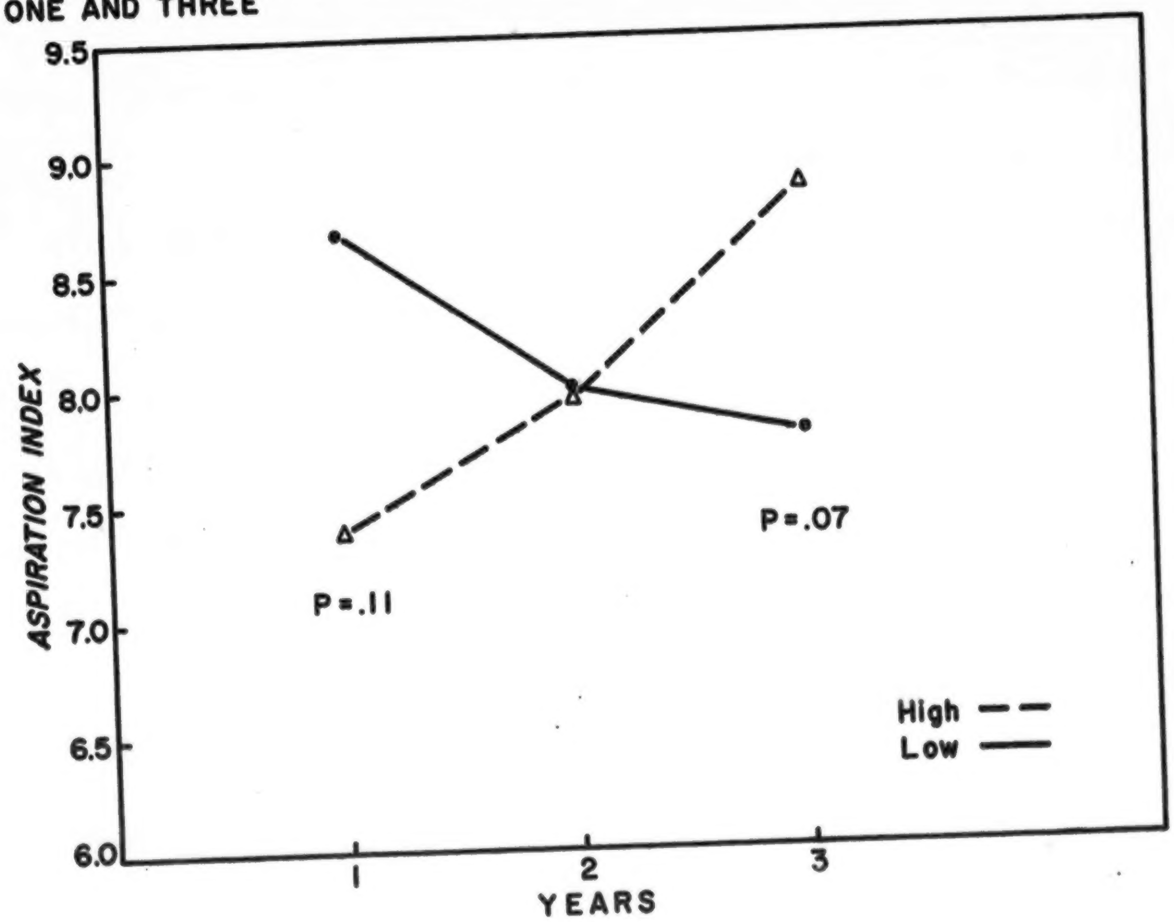


Figure 28

CHANGES IN ASPIRATION INDEX FOR GROUPS HIGH AND LOW IN EMPLOYABILITY OVER THREE YEARS, WITH ASSOCIATED SIGNIFICANCE LEVELS FOR YEARS ONE AND THREE



Discussion of Level of Aspiration

We have observed in the research reported in this chapter solid confirmation of our earlier hope and later assertion that there is much hearty psychological fare to be found in the analysis of level of aspiration patterns among the retarded. We have also demonstrated without question the enormous increase in power one generates when he studies a subtle variable longitudinally. Surely, had we only examined the characteristics of level of aspiration during the first year of this study or only during the third, we could never have understood its meaning as we do now. Furthermore, had we stopped with a single correlational analysis of the relationship between the average level of aspiration ratio and other variables, we would have concluded with a puzzling and disturbing statement that level of aspiration was correlated moderately and negatively with these other variables and that individuals low in employability have higher aspiration levels than their high employability peers.

We can now see that the level of aspiration variable is operating in a far more complex manner. There is a tendency for the high employability group to set moderate levels of aspiration, while the low employability group inhabits the more extreme positions at either end. This is the case whether we use the ratio as our metric, in which case a statistical artifact serves to reinforce this distribution of values, or whether we correct to a squared deviation analysis. Furthermore, there is an increasing trend in this direction over the course of the study. This can be seen in the fact that the average level of aspiration ratio for the low employability group is always higher than that for the high employability group. Also, their respective standard deviations differ in the same direction (Table 15, p. 64). That is, the variability of the scores of the low employability group is always greater than those of the high employability group, even though their N is smaller.

It is when we shift to an analysis of the level of aspiration pattern and the Aspiration Index that we find our most dramatic evidence of change. It appears that members of the high employability group enter the program at age 14 with a far more pessimistic view of themselves and their abilities than do members of the low employability group. And well they might! Let us not forget that these are all children who have been selected from classes for the educable mentally handicapped. They have experienced approximately eight years of academic failure before entering this rehabilitation program. The realistic and sensitive subject would, of course, given this history of past failure, reflect it in moderately pessimistic views of his own future competencies. It is the unrealistic and insensitive subject, who having managed to wall himself off from the effects of the reality around him, can maintain optimistic levels of aspiration in the face of this continued failure. It would now appear, in the bright and shining light of retrospective analysis, that the sensitive and realistically pessimistic child must first suffer the pain of disappointment in order to gain the subsequent rewards of vocational growth.

We subsequently see that over the next two measurement periods, whether members of the experimental or control group, the high employability subjects begin to shift their level of aspiration patterns. Their average level of aspiration ratios become slightly, though insignificantly, more positive. They generally shift from predominantly pessimistic to predominantly optimistic and realistic goal-setters. Only 12% of all levels of aspirations set by the high employability group are pessimistic in the third year, in contrast to over 40% during the first year. This same change is reflected in the shift in the Aspiration Index score reported in Figure 28. In contrast to this dramatic change in the high employability group, the low employability group undergoes little change. They remain as insensitive to the world around them as they were before. If anything, the absolute value of their average level of aspiration ratio has increased over the course of the study.

We have demonstrated in this chapter that the longitudinal analysis of level of aspiration scores can yield important findings concerning the general and vocational development of the mentally retarded. The study of goal setting behavior is relatively new in research on the handicapped. The longitudinal study of such behavior has begun with the present study. Let us hope that the present findings succeed in stimulating other investigators to explore similar paths.

CHAPTER X

COMPARISON OF NEGRO AND WHITE SUBJECTS

When the original samples for this study were drawn, an attempt was made to stratify the sampling procedures to insure that approximately one-third of the participating subjects would be Negro. No subsequent attempt was made to deal differently with the two races in the treatment program, but both the clinical impressions of those who worked with the subjects and our final outcome data suggested strongly that a specific analysis of white-Negro differences was appropriate to the study. From the very first year the impression of those who worked closely with the subjects was that, in general, the Negro clients were more competent. They seemed to work more effectively, to be more spontaneous and to learn more quickly. Yet, according to the diagnoses made by the school psychologists who had been responsible for assigning all of our subjects to classes for the educable mentally handicapped, there was no essential difference between the Negro and white children. Thus, the Stanford-Binet IQ's of both the white and Negro children fell well within the EMH range. Furthermore, there was no indication that the EMH curriculum was different for the two groups.

It may be appropriate to point out at this time that we do not use the terms "White" and "Negro" to refer to genotypically different subgroups in this chapter. The question of racial differences in intelligence and other characteristics has recently received great attention associated with inordinate emotionality on all sides. For our purposes white and Negro are social categories. We categorize as Negroes those subjects who view themselves and would be viewed by others as Negro. The same holds for white subjects. There is no reason to believe that any of the differences discussed in this chapter are genetically determined.

Whether an individual is classified as mentally retarded or culturally disadvantaged is contingent upon a number of factors, not the least important of which involve questions of social class and skin color. Thus, if a youngster whose Binet IQ is 65 comes from a white middle-class home, he will inevitably be classified as a retardate. That same IQ in a lower-class Negro youngster will generally evoke the cultural disadvantage classification.

Implicit in this distinction between mental retardation and cultural disadvantage are assumptions concerning both etiology and reversibility. It is generally asserted that, although both these forms of non-organic cognitive deficit are reversible, the etiologies of the two forms are different. For this reason different forms of both assessment and treatment may be necessary for the culturally disadvantaged and for the "garden variety" retardates. The research literature has recently been filled with arguments over the predictive validity of the standard measures of intellectual competence for the performance of culturally disadvantaged youngsters. Although in the present study we are in no position to judge the predictive validity of these instruments for academic pursuits, we are in a uniquely favorable position to investigate their validity for vocationally-relevant pursuits.

Relations with Employability

We shall examine the employability data first. At the end of Year III the mean employability score for Negro subjects is 107.90 while for white subjects it is 96.12. This difference is significant at the .04 level (Table 44). Of the eighteen subjects constituting the high employability group, ten are Negro. Of the fourteen low employability subjects, only three are Negro. Clearly, the Negro subjects who were selected for this project by the same process as their white counterparts emerge from the program manifesting the characteristics of employability to a much greater degree than do the white youngsters in the study.

A number of questions now must be answered. First, what are all of the ways in which we can identify differences between our Negro and white subjects, both at the end of the study and at its inception. We shall examine systematically the initial and terminal differences between white and Negro subjects on the major status variables used in this study. Next, we shall review the interview data which deals with the characteristics of the home, family and personal environments of our subjects in order to identify the ways in which Negro and white subjects differ in these areas. We will then examine the level of aspiration data which reflect dramatically a way in which the Negro subjects underwent a great change over the period of our study, while no such change was exhibited by the white subjects. Finally, we will re-examine the components of employability and how the two groups contrasted therein, after which we will discuss briefly the possible implications of these findings for the problems of race and special education in urban public schools.

Table 43 reports the differences between white and Negro subjects on the major status variables used in this study as measured in Year I. Associated with each pair of means and standard deviations is the value of F for the difference between those two means and the probability of that value occurring by chance. Although ostensibly drawn from the same general population, the groups are already demonstrably different. In only two of the twelve measures whose scores are reported in Table 43 are the white subjects even insignificantly higher. The Negro subjects have higher scores than the white subjects on every one of the other measures. While we may distinguish between those measures for which the difference is statistically significant and those for which it is not, it should be clear that the likelihood of the Negro group scoring more highly on 10 out of 12 measures merely by chance is very low. Those measures on which the differences are most striking are WISC IQ, WISC Verbal, Vineland Social Maturity, Chicago IQ, Production and the Purdue Pegboard. The probability levels associated with the F values for those measures range from .01 on the WISC Verbal to .07 on the Purdue. It might be noted parenthetically that despite the popular notion that Negroes are less verbal than are whites, the

TABLE 43

INITIAL DIFFERENCES BETWEEN WHITE (N = 37) AND NEGRO (N = 18) SUBJECTS ON THE MAJOR STATUS VARIABLES

YEAR I					
	Negro	White		Negro	White
Drawings			**Ratings**		
Mean	34.75	34.07	Mean	100.11	113.76
S.D.	13.17	8.41	S.D.	25.82	32.35
F	.04		F	2.44	
p	.83		p	.12	
Self-Concept			**Vineland**		
Mean	103.33	106.30	Mean	83.50	81.12
S.D.	17.23	20.02	S.D.	3.62	4.10
F	.29		F	4.39	
p	.59		p	.04	
Aspiration Index			**WISC IQ**		
Mean	7.11	8.04	Mean	69.78	62.84
S.D.	2.29	2.24	S.D.	7.84	10.57
F	1.45		F	6.10	
p	.24		p	.02	
Purdue			**WISC Verbal**		
Mean	211.72	191.11	Mean	26.39	22.03
S.D.	38.59	39.38	S.D.	5.40	5.62
F	3.36		F	7.48	
p	.07		p	.01	
Chicago IQ			**WISC Performance**		
Mean	69.22	66.59	Mean	31.56	28.11
S.D.	4.65	7.24	S.D.	9.21	12.55
F	1.97		F	1.07	
p	.17		p	.31	
Production			**Level of Aspiration**		
Mean	51.33	44.35	Mean	1.02	.98
S.D.	12.06	12.24	S.D.	.27	.42
F	3.98		F	.76	
p	.05		p	.40	

WISC Verbal Scale discriminates significantly between the two groups in favor of the Negroes. The only two measures on which the white sample is somewhat higher than the Negro sample are both components of our self-concept group, namely, Self-Concept Scale and Aspiration Index. We will discuss the implications of these two variables in a later section of this chapter.

We thus have a picture of a Negro group which upon entrance into the diagnostic assessment phase of the first year of the program already showed itself to be significantly more intelligent, more socially mature, more manually dexterous and more productive in the shop. Yet, for the purposes of the school system from which they were drawn, the two groups are parts of the same general population and treated in essentially the same manner in their classrooms.

Table 44 reports parallel values for Year III of the study. By Year III the differential attrition has taken place, leaving 22 white and 14 Negro subjects in the sample. As indicated earlier, the Negroes are significantly higher on the employability index than are the white subjects. Additionally, the Negro subjects show higher scores than the white subjects on every one of the other measures. Thus, there has also been a reversal of the non-significant Year I superiorities of the white over the Negro subjects on the Self-Concept Scale and the Aspiration Index. The most significant differences are now observed on the Aspiration Index, Production, Vineland Social Maturity and WISC IQ. The difference between Negroes and whites on the Purdue is as large in magnitude as it was during Year I, a diffeence of 20 points, but the great increase in the standard deviation

TABLE 44

DIFFERENCES BETWEEN WHITE (N = 22) NEGRO (N = 14) SUBJECTS ON THE MAJOR STATUS VARIABLES AND EMPLOYABILITY FOR YEAR III OF THE STUDY

	Year III				
	Negro	White		Negro	White
Drawings			Vineland		
Mean	38.33	35.46	Mean	87.33	84.41
S.D.	9.63	8.00	S.D.	1.95	3.32
F	1.02		F	9.39	
p	.32		p	.004	
Self-Concept			WISC IQ		
Mean	107.88	107.42	Mean	79.20	71.75
S.D.	21.70	18.20	S.D.	10.94	12.26
F	.005		F	3.69	
p	.94		p	.06	
Aspiration Index			WISC Verbal		
Mean	9.14	7.53	Mean	30.07	26.95
S.D.	1.35	1.78	S.D.	7.00	7.06
F	8.43		F	1.68	
p	.01		p	.20	
Purdue			WISC Performance		
Mean	233.57	214.95	Mean	40.93	36.00
S.D.	22.25	51.57	S.D.	11.03	13.19
F	1.62		F	1.35	
p	.21		p	.25	
Production			Level of Aspiration		
Mean	72.43	60.73	Mean	1.15	1.14
S.D.	14.30	15.42	S.D.	.14	.61
F	5.21		F	.024	
p	.03		p	.89	
Ratings			Employability		
Mean	96.43	105.32	Mean	107.90	96.12
S.D.	20.13	21.63	S.D.	16.13	16.44
F	1.52		F	4.46	
p	.23		p	.04	

associated with the white sample has rendered the value of F in this case much smaller than it would be under conditions of equal variance. We thus have a picture in Year III that is quite substantially parallel to that of Year I. The Negro sample is markedly and consistently superior to the white sample across all measures.

Having seen that the Negro sample is generally higher in mean scores than the white sample, the next question of interest will be whether the interrelationships among the variables are the same for the white and Negro samples. Tables 45-47 report the total intercorrelation matrices among the major status variables for Years I, II and III of the study. Correlations for the Negro subjects are above the diagonal.

It appears that the competence cluster of IQ, Vineland, Purdue, Ratings and Production exists more clearly for the white than for the Negro subjects. The magnitude of the correlations among these variables for the Negroes is much smaller. It also appears that the cluster of self-concept variables operates differently in the two groups. Level of aspiration and the Self-Concept Scale appear to correlate in a positive direction with many of the general competence variables in the Negro sample while correlating negatively in the white sample. A factor analysis, discussed in a later section of this chapter, confirms these observations of contrasting patterns of relations for the two groups. We will next examine how these variables relate to the employability criterion itself.

Table 48 reports the correlations between the measures used in this study and the third year employability index criterion for both

TABLE 45

FIRST-YEAR INTERCORRELATION MATRIX FOR WHITE (N = 37)[a] AND NEGRO (N = 18)[b] SUBJECTS ON MAJOR STATUS VARIABLES

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ		.88	.55	.35	.41	.42	-.02	.16	-.10	-.26
WISC Perf.	.93		.11	.39	.37	.36	-.27	.36	-.33	-.26
WISC Verbal	.66	.40		.08	.16	.32	.52	-.25	.38	-.08
Vineland	.20	.20	.18		.16	.25	-.05	.26	.10	-.51
Production	.59	.57	.37	.45		.56	-.15	-.03	-.25	-.03
Purdue	.56	.53	.39	.38	.64		-.05	.13	-.26	-.07
Self-Concept	-.05	-.11	.10	.19	-.04	-.23		-.34	.50	-.02
Ratings	.33	.29	.45	.45	.33	.23	.05		-.57	-.28
Level of Asp.	-.02	.01	-.10	.12	-.21	-.43	.29	-.18		-.07
Drawings	.08	-.03	.17	.06	.16	.08	.09	-.05	-.20	

[a] For N = 37, the probability of $\underline{r} \geq .33$ occurring by chance = .05; the probability of $\underline{r} \geq .42$ occurring by chance = .01. (two-tailed)

[b] For N = 18, the probability of $\underline{r} \geq .47$ occurring by chance = .05; the probability of $\underline{r} \geq .59$ occurring by chance = .01. (two-tailed)

TABLE 46

SECOND-YEAR INTERCORRELATION MATRIX FOR WHITE (N = 28) AND NEGRO (N = 16) SUBJECTS ON MAJOR STATUS VARIABLES[a, b]

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ		.90	.73	.37	.28	.12	.13	.18	.06	-.04
WISC Perf.	.94		.49	.43	.27	.22	-.20	.09	.07	-.01
WISC Verbal	.84	.63		.42	.21	.41	.53	.56	-.24	-.02
Vineland	.22	.24	.19		.15	.43	-.13	.51	-.15	-.06
Production	.53	.49	.29	.28		.07	.11	.30	.27	-.35
Purdue	.49	.56	.24	.54	.61		.07	.72	-.51	.36
Self-Concept	-.18	-.29	.01	.09	-.08	-.10		.45	.02	.22
Ratings	.33	.21	.44	.37	.43	.28	.20		-.19	.11
Level of Asp.	-.28	-.35	-.12	-.20	-.29	-.50	.31	-.40		-.22
Drawings	-.06	-.03	-.08	-.29	-.24	-.12	.02	-.17	-.18	

[a] Whites below diagonal--Negroes above diagonal. [b] For N = 28, the probability of $\underline{r} \geq .38 = .05$; $\underline{r} \geq .49$, .01. For N = 16, the corresponding values of $\underline{r}$ are .50 and .62. (two-tailed)

TABLE 47

THIRD-YEAR INTERCORRELATION MATRIX FOR WHITE (N = 22)[b] AND NEGRO (N = 14)[c] SUBJECTS ON MAJOR STATUS VARIABLES

	WISC IQ	WISC Perf.	WISC Verbal	Vineland	Prod.	Purdue	S.C.	Ratings	Level of Asp.	Drawings
WISC IQ		.92	.78	.20	.30	.33	.00	.10	.58	-.27
WISC Perf.	.91		.47	.15	.25	.21	-.19	-.04	.53	-.29
WISC Verbal	.60	.20		.22	.26	.40	.31	.25	.46	-.22
Vineland	.24	.21	.16		.10	.08	.07	-.04	.32	.09
Production	.55	.58	.17	.42		.57	.21	.52	.17	.15
Purdue	.61	.62	.23	.44	.81		.49	.66	.25	.12
Self-Concept	-.53	-.53	-.08	-.19	-.38	-.47		.50	.13	-.15
Ratings	.48	.41	.32	.31	.34	.30	-.58		.07	.00
Level of Asp.	-.41	-.41	-.16	-.31	-.42	-.39	.26	-.61		.26
Drawings	.47	.41	.27	.02	.02	.26	-.32	.27	-.03	

[a] Whites below diagonal--Negroes above diagonal

[b] For N = 22, the probability of $\underline{r} \geq .42$ occurring by chance = .05; the probability of $\underline{r} \geq .54$ occurring by chance = .01. (two-tailed)

[c] For N = 14, the probability of $\underline{r} \geq .53$ occurring by chance = .05; the probability of $\underline{r} \geq .66$ occurring by chance = .01. (two-tailed)

Years I and III for Negro and white groups. Looking at Year I first, a number of striking contrasts may be seen. In general, the correlations between employability and other variables are much higher for the white sample. This is most striking for WISC IQ, where the correlation of +.54 for whites is paralleled by a correlation of .00 for Negroes; the correlation of Vineland with employability is +.52 for whites and +.14 for Negroes. Even more striking are those relationships between measures of self-concept and employability during Year I. The Self-Concept Scale during Year I correlates +.42 with third year employability for Negroes while bearing a -.28 correlation for white subjects. In addition, the correlations between level of aspiration and employability are .00 for Negroes and -.42 for white subjects.

Moving on to Year III, a number of these relations become even more striking. Although, as in Year I, the Purdue Pegboard still has the highest correlations of any single variable with the employability criterion, the contrasts in WISC IQ, WISC Performance, Vineland, level of aspiration, Aspiration Indices and the Self-Concept Scale continue to be maintained. The three measures of self-concept, the Self-Concept Scale, the Aspiration Index and level of aspiration, consistently have negative correlations with employability for the white subjects of -.59, -.13 and -.63 respectively, while they bear positive correlations for the Negro sample of .42, .43 and .13 respectively. The earlier differentials in WISC IQ, WISC Performance and Vineland still hold.

What might account for these dramatic differences between the magnitude and direction of so many correlations between important

TABLE 48

CORRELATIONS OF EIGHT BASIC STATUS VARIABLES FOR YEARS ONE AND THREE WITH THIRD YEAR EMPLOYABILITY FOR WHITE (N = 22)[a] AND NEGRO (N = 14)[b] SUBJECTS

	Year I		Year III	
	White	Negro	White	Negro
Purdue	.73	.50	.67	.71
WISC IQ	.54	.00	.63	.23
WISC Perf.	.53	-.22	.60	.11
WISC Verbal	.40	.40	.30	.30
Chicago IQ	.30	-.18	----	----
Level of Asp.	-.42	.03	-.62	.13
Aspiration Index	-.29	-.04	-.13	.43
Self-Concept Scale	-.28	.42	-.59	.42

[a] For N = 22, the probability of $\underline{r} \geq .42$ occurring by chance = .05; of $\underline{r} \geq .54$, .01

[b] For N = 14, the probability of $\underline{r} \geq .53$ occurring by chance = .05; of $\underline{r} \geq .66$, .01. (two-tailed)

variables and employability for Negro and white subjects in our longitudinal study? The only two variables that seem to operate in a parallel manner during both years for both white and Negro samples are WISC Verbal and the Purdue. WISC Verbal maintains a moderate positive correlation with employability for both samples while the Purdue maintains a rather high positive correlation. The remaining variables, with the exception of the three self-concept measures, generally reflect a higher correlation for the white sample than for the Negro.

Measures of Self-Concept and Employability

It is the striking differences on the self-concept related variables that provide the most interesting material for discussion. Clearly, the self-concepts of Negro subjects relate to their general patterns of vocational competence in a totally different way than they do for white subjects. A positive self-concept for the Negro subjects, whether reflected in the self-report scale or the Aspiration Index, is positively correlated with employability. Level of aspiration also correlates positively with the employability criterion, though at a far lower level. In contrast, it would appear that a high self-concept for white subjects is generally indicative of low scores on the other variables. For white subjects high levels of aspiration and high Self-Concept Scale scores correlate negatively with employability. Aspiration Index scores tend in the same direction though at a much lower level.

We may now ask whether those patterns of relations have remained stable throughout the study or have shifted over the course of the years. This question can be answered by examining the changes in annual level of aspiration patterns for white and Negro subjects. It will be recalled that when we compared changes in aspiration patterns for high and low employability groups, we found a dramatic shift over the course of the study. The high employability group began with generally fewer optimistic aspirations than the low employability group but ended with far more optimistic aspirations. Figure 29 shows the comparable changes for Negro and white subjects in aspiration patterns by year.

Figure 29 depicts the proportion of optimistic, realistic and pessimistic aspirations by year for the Negro and the white groups. Strikingly, Negroes have increased their optimistic aspirations from 37% in Year I to 68% in Year III, while dropping their pessimistic aspirations from 47% to 8%. The corresponding shifts for the white sample are very small and insignificant.

This shift can be further examined in Figure 30, where changes in the average Aspiration Index for Years I-III are reported. Here again, the Negro subjects begin with lower scores on the Aspiration Index in Year I, but by Year III their average Aspiration Index is significantly higher. Thus here again we have a picture of a group of individuals who entered the program setting relatively pessimistic levels of aspiration and by the end of the study set far more optimistic levels. In fact, analysis of these data and the associated correla-

Figure 29

COMPARISON OF PROPORTIONAL FREQUENCIES OF OPTIMISTIC, REALISTIC AND PESSIMISTIC LEVEL OF ASPIRATION PATTERNS FOR NEGRO AND WHITE SUBJECTS OVER THREE YEARS

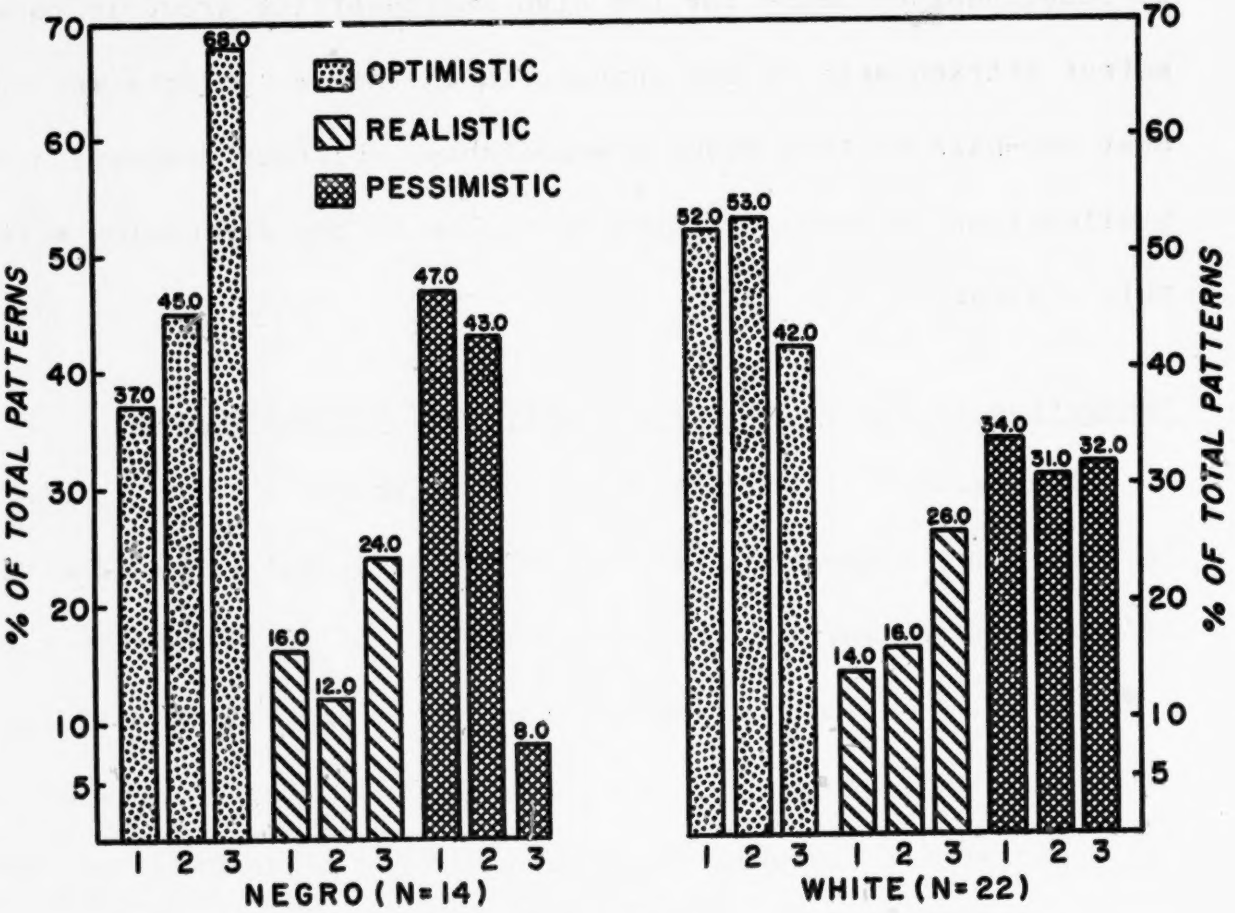
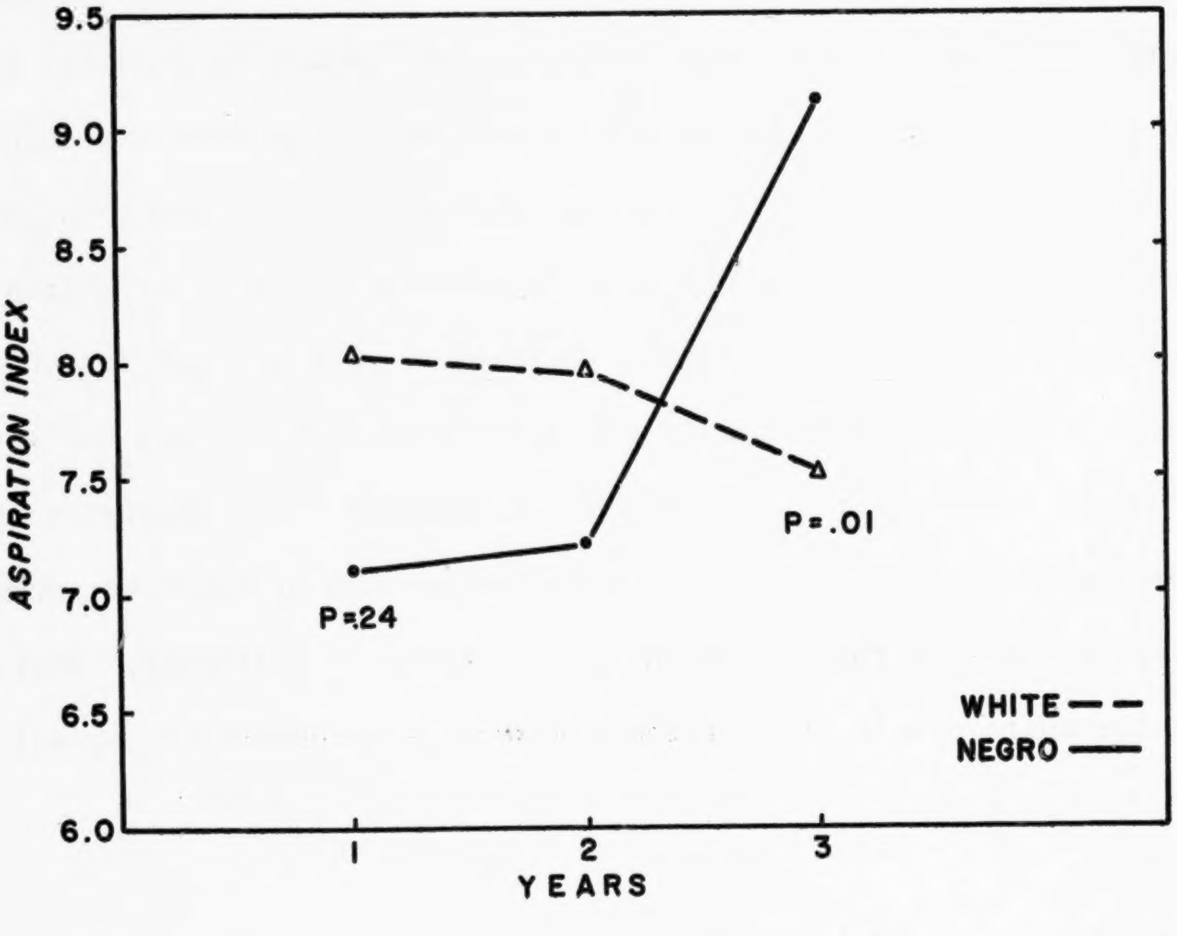


Figure 30

CHANGES IN AVERAGE ASPIRATION INDEX FOR WHITE AND NEGRO SUBJECTS OVER THREE YEARS WITH ASSOCIATED SIGNIFICANCE LEVELS FOR YEARS ONE AND THREE



tional data suggest strongly that the dramatic shift from early pessimism to subsequent optimism for the high employability group is to a great extent attributable to the changes in the Negro subjects who constituted over one-half of that group's membership. Further discussion of the implications of these differences follow in the discussion section of this chapter.

Prediction of Employability for White and Negro Subjects

The results of the comparison of Negro and white subjects up to this point suggested that it would be fruitful to examine the differences, if any, in the predictability of employability for these two groups. For this purpose, the multiple regression analysis which was completed for the entire group and reported in Chapter IV was repeated for the white and Negro samples separately. As was the case for the total group, the ten first-year predictor variables were regressed on the employability measure of the third year in a multiple regression analysis which deleted variables from the total multiple correlation one by one, thus reflecting the amount of variance in the total prediction contributed by each of the deleted variables.

Table 49 lists each of the ten variables in the order in which they were deleted by the multiple regression analysis for whites and Negroes respectively. Opposite the name of each variable is the value of the squared multiple correlation coefficient for the entire group of variables before that one was deleted. The squared multiple correlation coefficient reflects the proportion of total variance accounted for in the criterion by that group of variables. Thus, in the white sample 66% of the variance is accounted for by all

TABLE 49

MULTIPLE REGRESSION ANALYSIS FOR PREDICTION OF EMPLOYABILITY IN THIRD YEAR USING TEN FIRST YEAR VARIABLES AS PREDICTORS (N = 36) WITH VARIABLES LISTED IN THE ORDER IN WHICH THEY WERE DELETED FOR WHITE AND NEGRO SUBJECTS

White	R^2 Before Deletion	Negro	R^2 Before Deletion
Aspiration Index	.66	Aspiration Index	.86
Drawings	.66	Drawings	.84
WISC Verbal	.66	Self Concept	.80
WISC Perf.	.65	WISC Verbal	.75
Self-Concept	.64	WISC IQ	.67
Level of Asp.	.64	Vineland	.63
Chicago IQ	.62	Chicago IQ	.48
WISC IQ	.59	Level of Asp.	.44
Vineland	.59	WISC Perf.	.37
Purdue	.53	Purdue	.25

ten predictors, and when the health variable is deleted from the regression, 66% of the variance still remains accounted for by the balance of the variables. Another example with somewhat greater effects for the deletion of the variables will be taken from the Negro list. Before the Vineland Social Maturity Scale is deleted as a variable, 63% of the variance in Negro employability is accounted for by the Vineland and the four remaining variables. After the Vineland has been deleted, the proportion of variance still accounted for by the remaining four variables has dropped to 48%.

A number of comparisons between the two regressions can be made. It is not the order in which variables are deleted which distinguishes the two regressions. The Spearman rank-order correlation between the two orders is +.76. Rather, it is in the overall magnitude of the multiple correlations and the amount of variance contributed by individual variables that the two regressions differ.

For the white sample the results are very similar to those for the entire group as reported in Table 17, Chapter IV. The Purdue Pegboard accounts for 53% of the total variance in employability, with the other nine variables jointly adding only an additional 13%. It is only the Vineland, which is the last variable deleted before the Purdue, which makes any substantial independent contribution of its own to the total variance in employability.

The regression of the Negro subjects contrasts markedly with that for the white subjects. First, the total variance accounted for by all ten predictors is 86%, which is probably all the reliable variance in employability. This is much higher than the 66% accounted for by all the predictors in the white sample. Second, while the Purdue is still the best single predictor, almost all the other variables are making hefty contributions as well. As in the case of the white regression analysis, the Vineland is responsible for the second largest amount of variance in employability for the Negroes. In addition, WISC Performance and level of aspiration make substantial contributions.

We thus have a somewhat paradoxical finding. When the predictor variables are taken individually, they correlate much more highly with employability for whites than for Negroes. When they are combined in a multiple regression, however, the resulting multiple correlations are far higher for the Negro group than for their white counterparts.

There is a rather simple explanation for this phenomenon. In the white sample the overlap among the predictor variables was much greater, as reflected in the higher intercorrelations among the scores comprising the competence cluster. Therefore, when they were combined in a multiple regression, their predictive effectiveness in concert was only slightly greater than for the best single predictor, the Purdue, operating alone. In contrast, the individual predictor variables for the Negroes overlap among themselves much less. Thus, though individually less potent as predictors of employability for Negroes than for whites, when combined in a multiple regression, their joint contributions result in a far higher proportion of variance accounted for.

It is true that one cannot predict employability as well for Negroes as for white EMH youngsters if only single predictors are used. However, when multiple predictors are employed, we have found that the prediction for Negroes is far better than for whites. Prediction of Negro employability in our sample is thus not more difficult, it is simply more complex. This is a distinction well worth noting.

Factor Analytic Contrast

To complete the analysis of the relations between the predictor variables and employability for the white and Negro groups, separate factor analyses were computed. The same variables used in the total group factor analysis reported in Chapter IV were included in these analyses. The factor loadings of each variable for the first and third years of the study for the white and Negro groups are reported in Appendix .

In general, the differences in observed factor structures were as anticipated. The loadings for the white subjects essentially replicated those for the total group as reported in Chapter IV. The structure for Negroes was quite different. The variables of the competence cluster were evenly divided between two factors, with Production, Ratings, Purdue and Employability loading highly on one, and the Vineland, WISC IQ and WISC Verbal loading on the other. Self-concept variables were positively loaded on both these factors for the Negroes while tending to load in a direction opposite that of the competence variables for the white subjects.

Thus, the factor analytic contrast of the white and Negro groups serves merely to corroborate the earlier observations made of the differences between them.

Ratings of Work Behavior

Although the Negroes as a group had a higher mean diagnostic rating score than did the white sample, the difference was quite small and the overlap between the two distributions quite extensive. This was reflected in the F value of 1.52 for that difference and its associated p value of .23. Since the employability score is composed of both ratings and production, it appears that the differences between the two groups in production made the major contribution to their subsequent differences in the employability index. Yet, the likelihood remained that although the total score on the rating scale did not clearly distinguish between Negro and white subjects, some specific items on the scale did. In order to test that hypothesis, an item analysis of the diagnostic rating scale for the third year was conducted in which the item score differences for Negroes and whites were examined for every item.

Table 50 reports the ten items which were significantly different for white and Negro subjects with their associated means, standard deviations, F's and significance levels. It must be remembered that on the rating scale low scores are superior to high scores; that is, a score of three is "higher" than a score of six. Using a probability of .05 as the arbitrary cut-off point, eight items were significantly higher for the Negro group than the white group while two were significantly higher for the white group. Of the 25 items on the scale, the Negro group had a higher average score than the white group on 20 of these.

The eight items for which the Negroes were significantly superior deal with the general adequacy of the client's work behavior and the overall appropriateness of his personal behavior and dealings with superordinates. The Negroes were perceived in general as manifesting behavior which was more appropriate to the worker role than were their white counterparts. Since the comparison of the high and low employability groups (see Chapter IV) showed all but four items to discriminate significantly between those two, it is clear that, at least as far as the rating scale is concerned, the distinction between high and low employ-

TABLE 50

COMPARISONS OF NEGRO (N = 14) AND WHITE (N = 22) SUBJECTS
ON SELECTED ITEMS OF DIAGNOSTIC RATING SCALE
FOR THIRD YEAR OF THE STUDY

			Negro		White
1.	Reaction to change of jobs	Mean	5.53		4.94
		S.D.	1.34		1.51
		F		6.55	
		p		.01	
6.	Comprehension and/or carrying out of instructions	Mean	2.60		3.35
		S.D.	1.84		2.15
		F		5.48	
		p		.02	
8.	Rhythm and coordination	Mean	4.26		5.17
		S.D.	2.39		2.16
		F		6.80	
		p		.01	
12.	Odd or inappropriate behavior	Mean	2.58		3.28
		S.D.	2.02		2.30
		F		4.15	
		p		.04	
13.	Complaints about self-inadequacies or illnesses	Mean	1.68		2.16
		S.D.	1.17		1.55
		F		4.61	
		p		.03	

TABLE 50 CONT'D

COMPARISONS OF NEGRO (N = 14) AND WHITE (N = 22) SUBJECTS
ON SELECTED ITEMS OF DIAGNOSTIC RATING SCALE
FOR THIRD YEAR OF THE STUDY

		Negro		White
14. Client's requests for assistance or attention from foreman	Mean	2.62		4.07
	S.D.	1.65		2.27
	F		20.35	
	p		<.0005	
19. Reactions to pressure originating in work group	Mean	4.37		5.02
	S.D.	1.93		1.39
	F		6.15	
	p		.01	
24. Inappropriate personalization of client's relationship with foreman	Mean	1.94		3.43
	S.D.	1.31		2.36
	F		21.96	
	p		<.0005	
25. Acceptability of client's role as a worker	Mean	5.39		6.11
	S.D.	2.27		2.15
	F		4.36	
	p		.04	
26. Response to support and/or praise From foreman	Mean	5.19		4.79
	S.D.	.89		1.15
	F		5.53	
	p		.02	

ability is not simply a color difference. There was no monolithic superiority on the rating scale for Negroes over whites.

The two items for which the white subjects were superior to the Negroes are the first and last items on the scale, "reaction to new job" and "response to support and/or praise from foreman." There appears to be only one thing that those two items share in common. It may be recalled from Chapter V that items 1 and 26 were the only two items in the rating scale which showed negative change for the entire group over the course of the study. That is, these were the only two items on which, in the judgments of the raters, the youngsters in general were poorer at the end of the study than they were at the beginning. In addition, these were two of the four items that did not distinguish between high and low employability subjects.

Interview Comparisons

This section is based on a comparison of the interview data for the Negro and white subjects in the present study. The purpose of the comparison is to identify those similarities, differences and changes in status over a three-year period which existed in family background, social relationships, interests and work habits, and self-concept between the Negro and white subjects. This type of comparison may help in understanding some of the other striking differences between these two groups reported earlier in this chapter.

Current Family Situation

One of the most striking differences between the two groups is family size. Among the Negro subjects the median number of siblings was five, while for the white subjects it was one. Only 12% of the Negro subjects for which data are available had their own rooms, while 50% of whites had their own rooms. Thus the Negro subjects were from larger families living in more crowded conditions than the white subjects, which is clearly an indication of lower socio-economic status. Another indication of social class membership is parental occupation and education. Both measures distinguished between the Negro and white subjects in our sample. Of the Negro fathers responding, 100% held blue collar jobs; the same was true of only 50% of the white fathers. The fathers of white subjects had more education than the fathers of the Negroes. Of the white fathers 35% had at least a high school diploma while no Negro father had graduated from high school. Further, 37% of the Negro fathers had no more than an elementary school education while only 9% of the white fathers failed to exceed this minimum. The educational differences for mothers followed a similar pattern.

As might be expected, these educational differences are paralleled by general intellectual differences between groups. Among the white families, 38% were rated as showing some intellectual excellence; only 6% of the Negro families were so rated. When the interviewers rated the families of our subjects on indications of mental retardation in members of the family other than the subject himself, mental retardation was observed in 56% of the Negro families and 29% of the white families. In addition, the Negro families appeared to be less stable than white families. Fewer Negro fathers were employed full time than white fathers. Negro fathers changed jobs more often than did white fathers; 61% of the white fathers held three or fewer jobs within the previous ten year period while this was true of only 31% of the Negro fathers. Also, more Negro families made frequent moves, often interstate, than white families, and more Negro than white families were rated as being unstable. In general, however there were no noticable differences between the families of the groups in regard to marital stability.

The two groups can also be distinguished on the basis of parental expectations and aspirations for their mentally retarded child. Parental perception of their child's major problem distinguished Negro from white; 74% of the white parents felt their child's problem was intellectual and 10% felt it was emotional or motivational, whereas only 50% of the Negro parents felt the problem was intellectual and 25% felt it was emotional or motivational. In addition, white parents were found to have more realistic aspirations and more stable expectations than were the Negro parents.

Summarizing the family situation, the Negro subjects in our study were found to come from larger families and to live in more crowded conditions than the white subjects. They were from generally lower-class families in which the father's occupation was generally blue collar and less stable than the white collar jobs of the white fathers. The Negro families tended to move around more than the white families. More white families displayed intellectual excellence than Negro families and there was less retardation in the white families than in the Negro families. Finally, the white families appeared to have a generally more realistic view of the child's problem.

It will be recalled that over 70% of the final Negro sample was in the high employability group while only 36% of the final white sample was in this group. It may be that the more economically and intellectually deprived environment from which our Negro subjects were drawn had the effect of inducing their intellectual deficits. Yet, by not overreacting to this deficit, Negro parents may in fact provide an environment in which the Negro child is more likely than the white child to have those experiences which later (by the end of the study) contribute to the child's employability. It also appears that the differences observed earlier in this chapter may be as much a social-class phenomenon as they are phenomenon related to skin color.

Social Relations

In general, the Negro subjects seemed to have more mature social relations than the white subjects. Of the two groups 69% of the Negroes and 42% of the whites belonged to a formal group. At the beginning of the study, 68% of the Negro subjects reported having more than three friends as compared with only 26% of the white subjects. This difference remained highly stable for the duration of the three-year period.

More of the Negroes had friends of the same age (87%) than did the whites (52%). Of the whites 35% had friends who were younger than themselves, while the same was true of only 6% of the Negro group. This difference was also stable across the three years of the study. Further, more of the Negro group tended to have friends among both sexes than did the white subjects. Fewer Negro subjects tended to have neurotic social needs than did the white subjects. For those Negroes who had such needs it was generally a need to dominate, while the predominant neurotic social need among whites was a need to be led.

Activities and Jobs

The major leisure time activities of these two groups of subjects differed considerably. The major activity of most of the Negro subjects was reported to be athletics or some other group physical activity. For the whites it was generally television watching, and therefore sedentary and individual. Although more Negroes (50%) reported having no hobbies than did whites (39%), the hobbies of the Negroes tended to require more physical and/or intellectual skill than the hobbies of the whites. By the end of the third year more Negro subjects had hobbies than did whites. Thus, the Negro group appears to have been more socially mature than the white group and this maturity carried over into the activities and hobbies of the Negro subjects.

Consonant with the differences in major activities, the groups differed considerably in work experience. Of the Negro subjects 75% had held at least one job as compared to 55% of the white subjects. The Negroes' jobs also tended to be in the community in general, while the whites tended to be employed by family or friends. This was additional evidence of greater sheltering of white than Negro subjects.

Self-Concept

In general, the Negro subjects tended to have higher self-concepts than the white subjects. Of the Negroes 62% felt that they were popular as compared to only 35% of the whites. More Negro subjects (62%) tended to have unrealistically high educational expectations than white subjects (48%). Also, only 25% of the Negroes felt they were in special classes because of an intellectual deficit as compared with 42%

of whites. Consequently, only 31% of the Negroes were satisfied with special classes while 48% of the whites felt satisfied with them.

Finally, when the interviewers rated their confidence in the employability of the subjects during Year I, 56% of the Negroes were judged as employable while only 32% of the whites were so judged. By Year III 75% of Negroes were judged employable by the interviewers in contrast to 36% of white subjects.

Summary

Although our group of Negro subjects came from what one might consider a somewhat deprived environment in contrast to the white subjects, and although they were classified as mentally retarded, they were found to be superior to the white subjects in all but strictly intellectual measures. Their social relationships, interests and jobs appeared to be age-appropriate, especially when contrasted with the white subjects. By the third year the vast majority of the Negroes (75%) were considered employable as contrasted with the whites (36%). The "deprived" environment of the lower-class Negro retarded child was apparently conducive to his vocational development in that it did not inordinately shelter or protect him but treated him as any normal child. Hence, he was exposed to more diversified experiences than the middle-class white retarded child.

General Discussion of Negro-White Differences

The present chapter has been devoted to an analysis of the differences between white and Negro subjects participating in the present longitudinal study. The analysis was motivated by observations of those who worked with the subjects throughout the service portion of the program that Negro subjects generally seemed more competent and vocationally mature than their white counterparts. This observation was further corroborated by the significant difference between Negro and white subjects on the Employability Index.

The analyses in the current chapter yielded a number of important findings. It appeared that the competence variables, namely IQ, Vineland and Purdue, did not correlate with the employability criterion at the same levels of magnitude for the Negro as for the white samples. Thus, the Purdue, which was the best single predictor for both groups, yielded a correlation of +.72 with third year employability for the white sample while only +.49 for the Negro sample. The Vineland correlated +.52 with employability for the white sample while only +.14 for the Negro. Finally, WISC IQ correlated +.54 for the white sample and .00 for the Negro. More striking even than the contrast in the ways in which the competence cluster related to employability was the manner in which the self-concept variables related. Here, we saw that the Negro who had a high self-concept and optimistic levels of aspiration was generally also high on employability. This same Negro was likely to have begun the first year of the program, however, with a much less optimistic level of aspiration and to have changed over the course of the three years. In contrast, the white subjects who had very high levels of aspiration and self-concepts tended to be those who were lowest in employability.

This latter set of findings suggests an important difference between the Negro and white subjects in our sample. The Negroes seem much more realistic about both their abilities and their disabilities.

When optimism and positive self-concept were warranted, they were generally reflected. When unwarranted, they were suppressed.

The white subjects seemed less able to cope with their experiences of personal incompetence and appeared strongly to compensate for them with inappropriate delusions of personal grandeur. Those white subjects who were most competent appeared, in contrast, most self-deprecating.

What might account for these differences between white and Negro subjects? The interview data may suggest some reasons. It will be recalled that the Negroes were almost uniformly of lower class origin with concomitantly lower educational levels reported for their parents. The Negro parents seemed much less concerned by the mental retardation of their children and in many cases seemed to deny that it was there. Among the consequences of this denial, however, was the insistence upon a relatively normal personal and social life for their children. Negro subjects tended to socialize with same-age peers far more often than white subjects. They were more socially mature than white subjects, taking upon themselves far more responsibilities and freedoms than did the white subjects. In general, though considered mentally retarded by the schools, the Negro subjects did not seem to behave like mentally retarded individuals when outside of the school. This did not seem to be the case with the white subjects.

Possibly because of the generally better education and higher social class status of our white subjects, there was also much more sensitivity to the presence of mental retardation in their families. This sensitivity seemed to have led to a greater sheltering of the subjects and consequently to their lower social maturity. The white subjects tended not to associate with same-age peers to the extent of the Negro subjects and tended generally to be more isolated. As suggested earlier, these findings seem less attributable to differences in skin color than to social and economic status. We are contrasting not so much Negroes and whites as lower-class disadvantaged youngsters and middle-class retardates. That the two factors, skin color and social class, are confounded in this study is unfortunate. We are in no position to say whether or how the results would be different if either skin color or social class could be controlled. Nevertheless, we must recognize that these two factors are preponderantly confounded in society at large, and hence, our sample accurately reflects the conditions in the real world.

The very low correlations between measured intelligence and employability for the Negro subjects may corroborate an assertion made by Jensen (1967). On the basis of a series of studies on social class differences in mediation in verbal learning, Jensen states

> . . . tested IQ correlates highly with learning ability in middle-class children. *IQ correlates negligibly with learning ability in lower-class children*. Also, there is some indication that in the above-average IQ range lower-class and middle-class children matched on IQ are similar in learning ability. *It is mainly in the IQ range from 60 to 80 that lower-class children are significantly superior to low IQ middle-class children in learning ability*. (Italics ours)

In the present study both of Jensen's assertions are confirmed. Lower-class children in the 60-80 IQ range perform better than middle-class counterparts. IQ predicts the employability of the middle-class children but not the lower-class. We might view employability as a measure similar in many ways to learning ability. The employability index in our study refers to the extent to which the subjects learned to adapt to the totally novel situation of the workshop. For white subjects this adaptability was well predicted by intelligence and social maturity as measured upon entrance into the program, as well as by the test of manual dexterity, the Purdue. For the Negro subjects it was only the test of manual dexterity that was an effective predictor. Prediction for Negroes was improved only by combining variables in a multiple regression.

What might account for the predictive validity of the Purdue Pegboard consistently across groups while other predictor variables, such as IQ, fail to operate consistently? A hypothesis which ought to be considered seriously is that, of all the predictors used in our study, the Purdue is the only one which requires that the subject actually learn to do something new as part of the task itself. On this test he is given instructions for placing pegs in holes in a particular order and then must follow these instructions closely. The last subtest of the Purdue, which contributed most of the variance in our administrations, is called the assembly task. In this task the subject is instructed to build a four-piece construction using a peg, a washer, a sleeve or collar, and an additional washer. He is to build as many of these as he can within a restricted time period. The pieces are all quite small. Thus, he must attend to instructions which describe a somewhat complex task for him and then proceed to accomplish that task as quickly as he can. Clearly, the Purdue thus serves as a test of not only manual dexterity, but more important, of both the motivation and ability to learn.

Support for the contention that the effectiveness of the Purdue in predicting employability is due to the fact that it is a learning task rather than merely a measure of previous knowledge, lies in the observation that of all of the subscales of the WISC, that which discriminated most significantly between those subjects high and low on employability was Coding. The Coding subtest resembles the Purdue most closely of all the other subtests of the Wechsler in that it requires that the student combine the learning of a new task with its completion under time pressure. In addition, the Coding subtest, like the Purdue, has a large psychomotor or manual dexterity component.

What are the implications of these findings for the theory and practice of education? Currently, students are placed in classes for the educable mentally handicapped on the basis of their academic achievement and their scores on the Stanford-Binet. These indices showed both white and Negro subjects in our sample to be well within the EMH range at the inception of the program.

The fact that, though indistinguishable on the basis of the typical measures used by the public schools, the Negro and white subjects in the study turn out to be so radically different may suggest that many of the "color-blind" practices in our big city public schools are inappropriate. It may be that the civil rights leaders are correct. Different kinds of predictive criteria must be used for assessing Negro and white subjects. We must shift from a dependence upon measures of IQ for assignment to special classes to measures which are much more closely related to learning ability, especially when dealing with lower-class subjects. The data of the present study are not sufficient to demonstrate these propositions unequivocally. But they are surely grounds for a serious reanalysis of many of our current practices in special education.

CHAPTER XI

THE SELF-CONCEPT

There are few constructs in current psychological theory that combine intuitive feast with empirical famine as does the self-concept. It is difficult to find anyone who does not believe that, at some level, the way a person thinks about himself can affect his behavior. Many theories, especially those of the phenomenologists or perceptualists, are totally based upon the notion of a self-conception as the keystone for an understanding of behavior. Combs and Snygg (1959), Macleod (1964) and Brookover (1967) are among many who have developed theories of behavior based upon the self-concept. However, Wylie (1961), in her review of the literature investigating the meaning of this concept, has found a depressingly small amount of consistent empirical literature on the topic. Skinner (1964), while admitting that people have perceptions of themselves, denies that this self-concept has any particular causal effect on behavior. He maintains that the self-concept is an epiphenomenon, that is, a set of self-descriptive verbal behaviors which follows rather than causes crucial behaviors.

In Chapter II of this report it was stressed that the conception or perception that a handicapped individual has of himself is considered to be a crucial variable in accounting for his vocational development. The theories of Erikson, Gellman and others clearly emphasize some form of self-concept or ego-identity. As we turned to study this aspect of behavior in the present investigation, we thus had to come to grips with questions of the evaluation and interpretation of measures which purported to reflect the self-conception of individuals.

It is here that we confronted what may be the major problem hampering effective research on self-concept, that is, the problem of context. Most measures of self-concept are based upon what individuals say about themselves. Less often, they are based upon how individuals behave in a particular situation. There seems to be a somewhat naive assumption in the self-concept literature that a man's conception of himself remains relatively stable in the face of radical shifts of situation or context. However, it was our feeling that this was not necessarily the case. We felt that any single measure of self-concept might easily fall prey to the problems of methodological or context variance overriding the variance attributable to the trait ostensibly being measured. This was a lesson to be easily learned from the pioneering work of Campbell and Fiske (1959) on the use of the multitrait-multimethod matrix for the convergent and discriminant validation of psychological traits.

It was this recognition that led us to attempt to triangulate on the self-concept, that is, to attempt to measure this construct via more than one route simultaneously. Each of the four methods we selected has in many places in the psychological literature been employed as the sole measure of self-concept for a particular piece of research. It was our expectation that the four measures would show relatively low intercorrelations among themselves due to the method variation, yet might yield interesting patterns of relations that could provide far more stable insights into self-concept than were possible through the use of the single method alone. As recently as 1964, an exhaustive review of the literature on personality among the mentally retarded by Heber (1964) could identify only two studies that were relevant to questions of self-concept among the retarded. Thus, the data that we are about to present, although not without problems themselves, are unique in many ways.

Methods of Study

Four different methods were selected to study the self-conceptions of the retardates in our study. The first was the Self-Attitude Inventory. This inventory had originally been constructed by Guthrie (1961) for the study of attitudes toward self among institutionalized and non-institutionalized retarded girls. The scale contained 150 items administered orally to which the subjects responded yes or no. The entire scale is reproduced in Appendix F. The scale yielded a total positive score which reflected the number of items out of 150 to which the subject responded with a judgment reflecting positively on this perception of himself. It was also possible to score for five separate areas, namely, General, Home, School, Play and Work. However, we found the intercorrelations among these subscales were sufficiently high to preclude the likelihood that subscore analysis would yield anything substantially more fruitful than the total score.

This method of measuring self-concept with a self-descriptive personality inventory is probably the most widely used in the psychological literature. It is replete with problems, despite its wide use. One of the major problems affecting its validity is that of response set. Dozens of articles and papers have been published dealing with the issue of response set in the use of personality scales. The basic question here is the extent to which individuals may tend to be "yea-sayers" or "nay-sayers" to a series of personality scale items irrespective of their content. There is an additional problem of social desirability. This is reflected in a subject's tendency, not to respond yes or no indiscriminately, but rather always to attempt to project the most socially desirable image of himself irrespective of his real feelings or behaviors. Both of these kinds of problems may be magnified in a retarded sample and are among the reasons why the methodological triangulation of a construct is especially critical.

A second way to gain insight into the manner in which a subject perceives himself is through the structured interview technique. A detailed description and analysis of the structured interviews used in this study and the manner in which the responses were coded for analysis are given in Chapter VII of this report, as well as in Appendices B and C. In order to derive a specific self-concept score from the responses to this interview, five particular areas were identified within the interview because they were felt to reflect most directly on the self-perception of the respondent. These areas were social self-perception, perception of own health and vigor, perception of own appearance, educational aspirations and vocational aspirations.

The possible responses to each of these five items were then assigned values on a five-point scale representing positiveness of stated self-conception. The scores on these items were then summed to derive an interview-based self-concept score for each year whose possible range was zero to 25.

The third source of data on the self-concept of our subjects comes from the projective drawings. The details of the scoring of these drawings are given in Chapter VIII of this report. Clearly, the major question to be answered before being able to use these drawings as reflections of self-concept is whether, in drawing these pictures of people, the subjects were projecting their images of themselves. As has been pointed out in the literature as reviewed and reported in Chapter VIII and Appendix D, a most difficult yet fundamental question which must be raised concerning projective drawings is the nature of that which is being projected. First, it is possible that nothing is being projected; that is, that the subjects are simply engaging in a rather carefully supervised drawing exercise. Although most contemporary personality theories, especially those that are psychoanalytic in tradition, espouse the general determinedness of all behavior, and thus would suggest that any drawing must be projective in some way, it is far from clear that these drawings would necessarily be projecting those aspects of the conception of self which we would impute to them. Furthermore, there is the possibility that, even though they be projective, what is projected is not the conception of self as currently perceived, but some idealized conception of self. Although the writers in this area often raise questions such as these, they fail to provide us with many clues to assist in determining which of these possibilities we are confronted with in any given situation. Many previous studies simply assume that the drawings produced are direct projections of self-concept. In addition these studies rarely have additional measures of self-concept against which to corroborate these pictures. Therefore, although we shall presently make the shaky assumption that these _are_ projective self-concept drawings, we have stated our recognized _caveat_ and hence are somewhat less vulnerable to naive overextrapolation than some of our predecessors.

The fourth means of triangulating (or is it now quadrilating) on the measurement of self-concept is through the use of the level of aspiration. As has been indicated in the earlier chapter devoted to the level of aspiration, there is much literature to suggest that an individual's goal setting behavior is an important reflection of his conception of himself. We have reviewed the many ways available to us for analyzing this difficult construct of level of aspiration in the chapter devoted to that topic. The methods for collecting level of aspiration data in the present study have also been reviewed (Chapter IX).

Analysis of Self-Concept Data

We began our attempts at analysis of the overall self-concept data with the assumption that it would be a pattern of self-concept measures rather than some uniform summation of them which would yield the best understanding of the manner in which our subjects saw themselves. We also decided that the problem was sufficiently complex working within a single year of the study without attempting to examine all three years at once. We therefore determined to begin with Year III and attempt a thorough analysis of those data.

The first step was to examine the intercorrelations among the five basic self-concept variables and employability for Year III. Table 51 reports those correlations.

TABLE 51

INTERCORRELATIONS OF THE FIVE SELF CONCEPT SCORES AND EMPLOYABILITY FOR TOTAL GROUP (N = 36) YEAR III[a]

	Drawings	S.C.	Interview	L.A.	Asp. Index	Employ.
Drawings						
Self-Concept	-.23					
Interview	-.06	.47				
Level of Asp.	.01	.19	.01			
Aspiration Index	-.12	.14	-.14	.12		
Employability	.16	-.10	-.13	-.44	.19	

[a] For N = 36, the probability of $\underline{r} \geq .34$ occurring by chance = .05; the probability of $\underline{r} \geq .43$ occurring by chance = .01. (two-tailed)

It can readily be discerned that any anticipation that the self-concept of our subjects would be uniformly and consistently expressed across the five self-concept measures was unfounded. There is a tendency for the two self report measures, Interview and Self-Concept Scale, to correlate positively. There is also a slight tendency for the two aspiration measures, level of aspiration and the Aspiration Index also to correlate positively. There is also a slight tendency for the Self-Concept Scale to correlate moderately with the two aspiration measures, but these values are quite low. As we had seen in Chapter VIII, the drawings score correlates with none of these variables at any meaningful level. Finally, we find that three of the self-concept instruments correlate with employability in a negative direction, which is most striking for the level of aspiration measure.

What is the investigator to do when he finds that different methods for measuring ostensibly the same construct yield inconclusive or non-congruent findings? Can we speak of a self-concept independent of any means of measuring it? Are we to accept one of these indices on the basis of an *a priori* content analysis and ignore the others? Or can we expect that some means of summing or distilling the combination of measures will yield a precipitate which is the "true" self-concept?

Another alternative is that we carefully examine each context and try to identify some slightly different aspect of the attitude about self that is reflected in each of these methods for testing the self-concept of the respondent. That is, might it be that the structured interview situation reflects the most highly defended report of self-evaluation with the expected reaction of the interviewer taken greatly into account; the self-attitude inventory reflects a slightly less defended self-evaluation and the level of aspiration reflects the most realistic self-evaluation? The projective drawings, depending upon what the subject chooses to project under these conditions, could then reflect any of the above three. Additionally, drawings could portray an idealized ego-ideal notion of what the individual wishes he might be.

The work of Wallach and Kogan (1965) suggests that one can often clarify the nature of the interrelations among variables by identifying a moderator variable which accounts for the pattern of correlations encountered. That is, it is often the case that when looking at the intercorrelation pattern for an entire group, little consistency can be seen. This is because the entire group is made up of two or more different types of subjects, for whom the variables involved operate in different ways. By identifying the dimension on which these people differ most substantially and then dividing the group on that dimension, subsequent examination of the intercorrelation patterns within the now separated groups can reveal patterns heretofore unobserved. That dimension or variable used to divide a total group into its more easily studied portions is called a moderator variable.

Thus, the observation that these variables do not intercorrelate at a high level is not necessarily a signal to cease analyzing the data. Instead, we may hypothesize that the variables in question may mean different things to different types of subjects, but that these differences are currently being missed because the different subject types are presently grouped together in a single matrix.

It was apparent from earlier chapters that the moderator variable most likely to be fruitful in the study of self-concept was Negro-white. That is, we observed in Chapter X that the directions of the correlations between employability and self-concept were diametrically different for the white and Negro groups. For the white group, these correlations tended to be negative. That is, high self-concept was generally associated with low employability for white subjects. In the Negro group, the pattern was reversed. High self-concept tended to be associated with high employability. Table 52 reports the intercorrelations among the self-concept variables and employability for the now separated Negro and white subjects. The use of color (which of course includes social class in this sample) as a moderator variable

TABLE 52

INTERCORRELATIONS OF THE FIVE SELF-CONCEPT SCORES
AND EMPLOYABILITY, WHITE (N = 22)
NEGRO (N = 14) SUBJECTS, YEAR III[a]

	Drawings	S.C.	Interview	L.A.	Asp. Index	Employ.
Drawings		-.15	.05	.26	-.09	.08
Self-Concept	-.32		.43	.13	.36	.42
Interview	-.14	.52		.17	-.03	-.20
Level of Asp.	-.03	.26	-.01		.47	.13
Asp. Index	-.23	-.03	-.22	.10		.43
Employability	.17	-.59	-.12	-.63	-.13	

[a] Negroes above diagonal, whites below.

[b] For N = 22, the probability of $\underline{r} \geq .42$ occurring by chance = .05; of $\underline{r} \geq .54$, .01. For N = 14, the probability of $\underline{r} \geq .53$occurring by chance = .05; of $\underline{r} \geq .66$, .01. (two-tailed)

reveals that there are characteristically different patterns of relations in the two groups. The tendency is for the self-concept variables to correlate positively with employability among Negro subjects, and negatively among white subjects.

Patterns of Self-Concept

There is often a difference between the pattern of relations observed statistically among a set of variables for a particular group, and the meanner in which scores on those variables operate at the level of individual cases. Our next objective was to examine the individual patterns of self-concept scores for our subjects in order to identify the meaning of such patterns at an individual level.

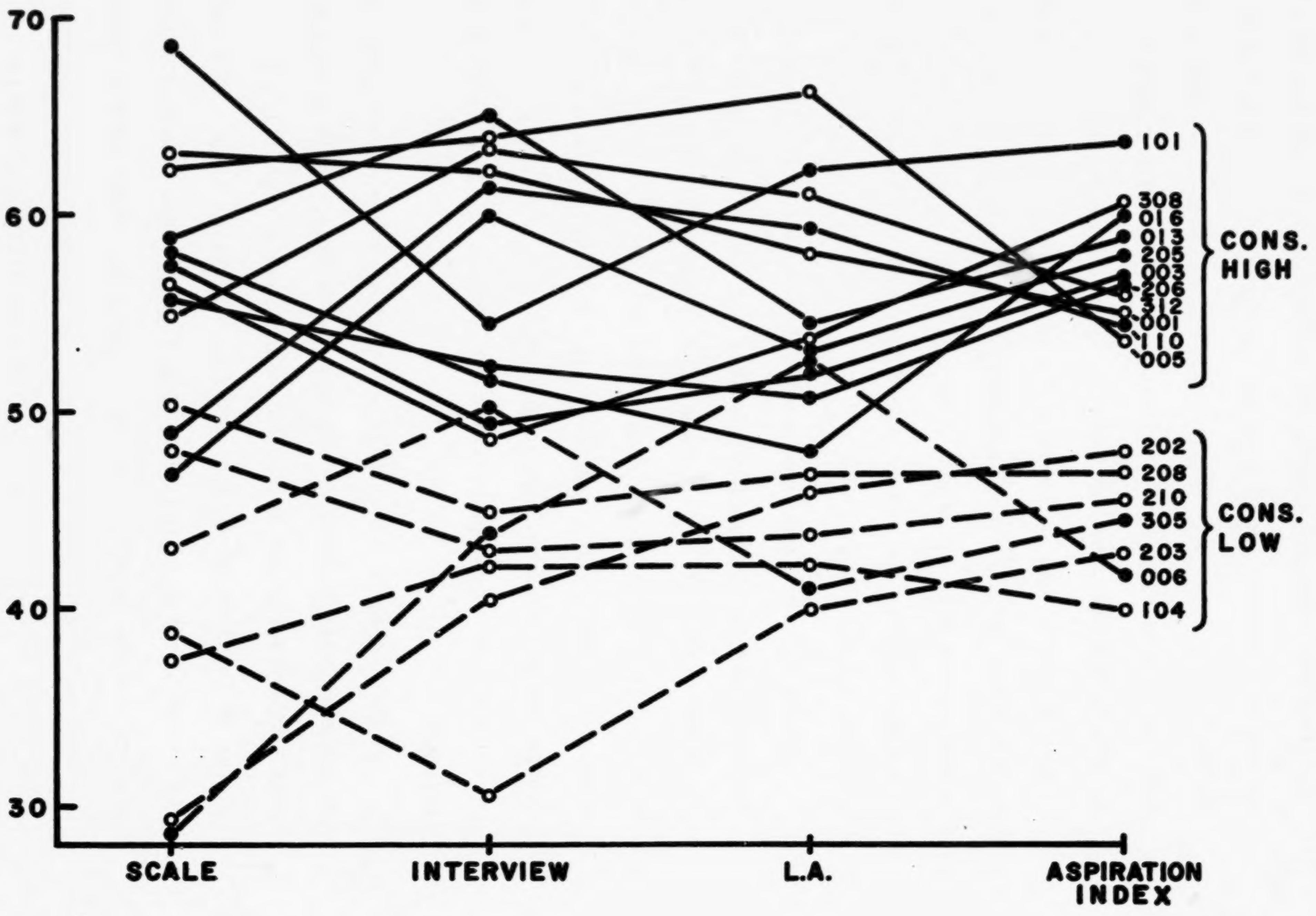
We first examined individual self-concept scores visually in order to isolate patterns which were so salient that they would stand out without the need of any statistical manipulation. The drawings score was not used in this first analysis, since it did not seem to relate systematically to other variables. In order to facilitate the visual inspection of scores on these variables, scores on all of the Year III self-concept measures and employability were converted to standard scores with a mean of 50 and a standard deviation of 10. We then proceeded to plot the standardized self-concept patterns for all of the subjects in the study.

As we did so, five consistent patterns emerged. The first of these was the Consistent High pattern. These were subjects for whom all four of the self-concept measures being examined, level of aspiration, Aspiration Index, Interview and Self-Concept Scale, were at or above the median of the distribution. A second pattern was the Consistent Low pattern. These subjects were at or below the median on all four self-concept measures. Figure 31 reproduces those two patterns.

A third pattern identified was that of subjects who generally reflected positive self-concepts on the self-report instruments, the Self-Concept Scale and Interview, which were not paralleled by their scores on level of aspiration and the Aspiration Index. This pattern was called Low Aspiration, High Self-Report. The fourth distinctive pattern was the reverse of pattern number 3. These were subjects who were relatively self-deprecating on the self-report instruments, while being rather optimistic on the aspiration instruments. This

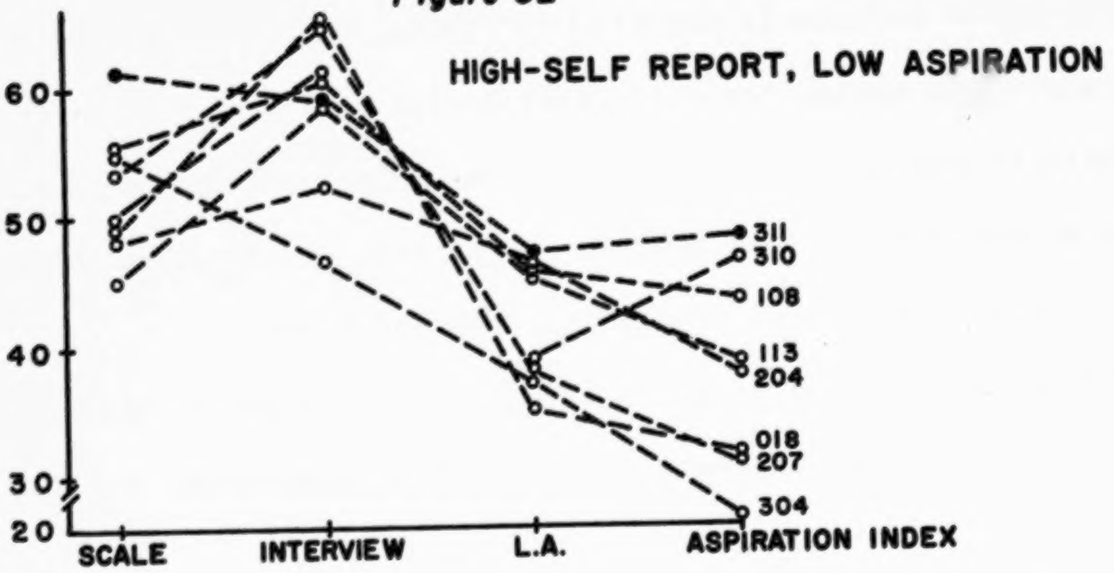
Figure 31

SELF-CONCEPT PATTERNS OF SUBJECTS VISUALLY IDENTIFIED AS CONSISTENTLY HIGH OR CONSISTENTLY LOW



THREE VISUALLY IDENTIFIED SELF-CONCEPT PATTERNS

Figure 32



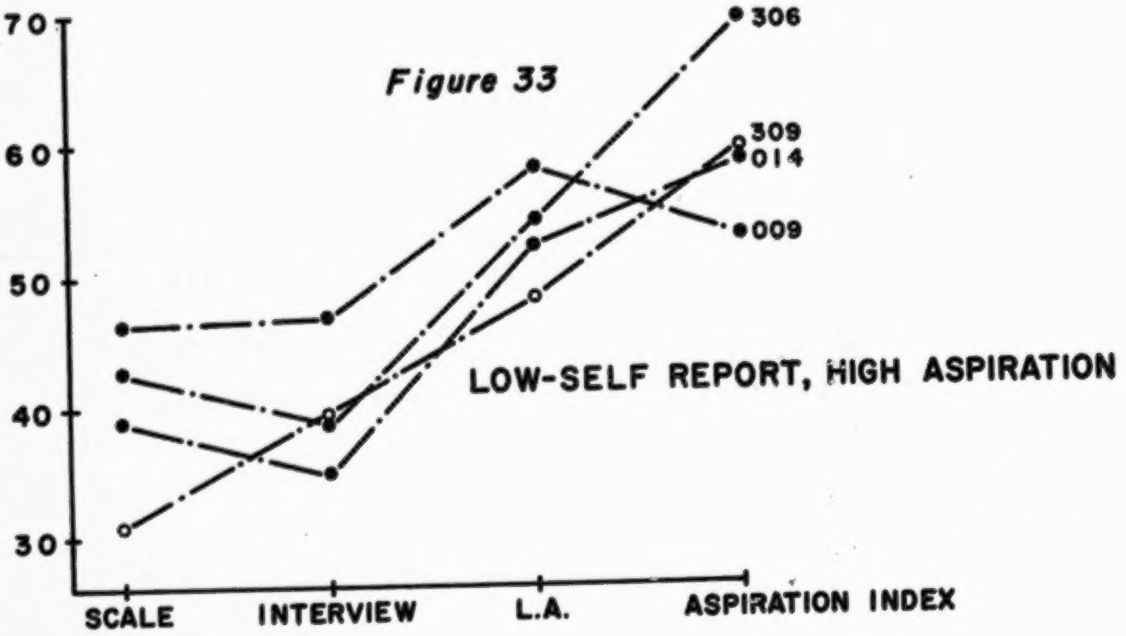
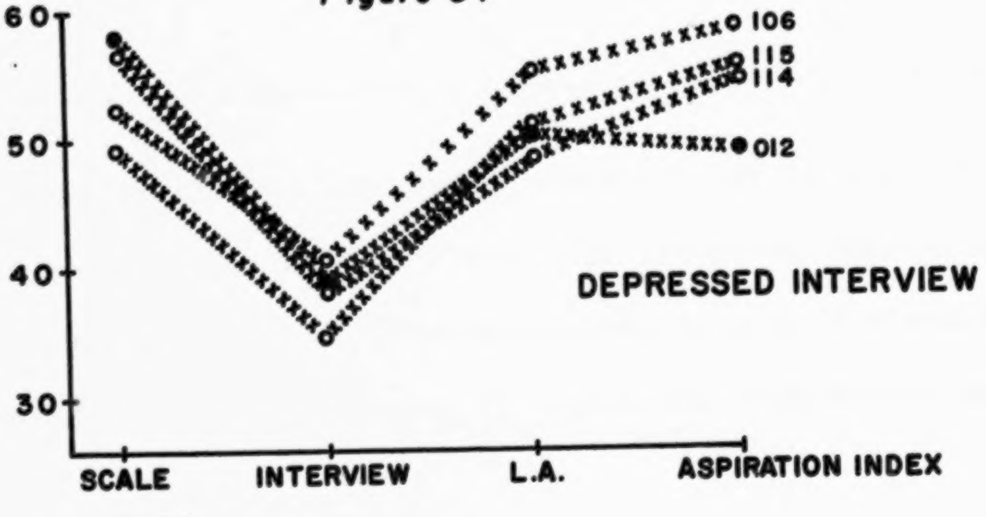


Figure 33

Figure 34



fourth pattern was called High Aspiration, Low Self-Report. Figures 32 and 33 reproduce those two patterns.

The fifth pattern is depicted in Figure 34. These subjects are at or above the median for all scores except Interview, which is depressed. This pattern was called the Depressed Interview. These individuals seemed to reflect positive feelings about self under all conditions except the most direct confrontation, the Interview.

Table 53 gives the frequencies and corresponding percentages of the incidence of each of these patterns by employability category and color group. A number of observations may be made.

TABLE 53

DISTRIBUTION OF SELF-CONCEPT PATTERNS BY
EMPLOYABILITY STATUS AND COLOR, YEAR III

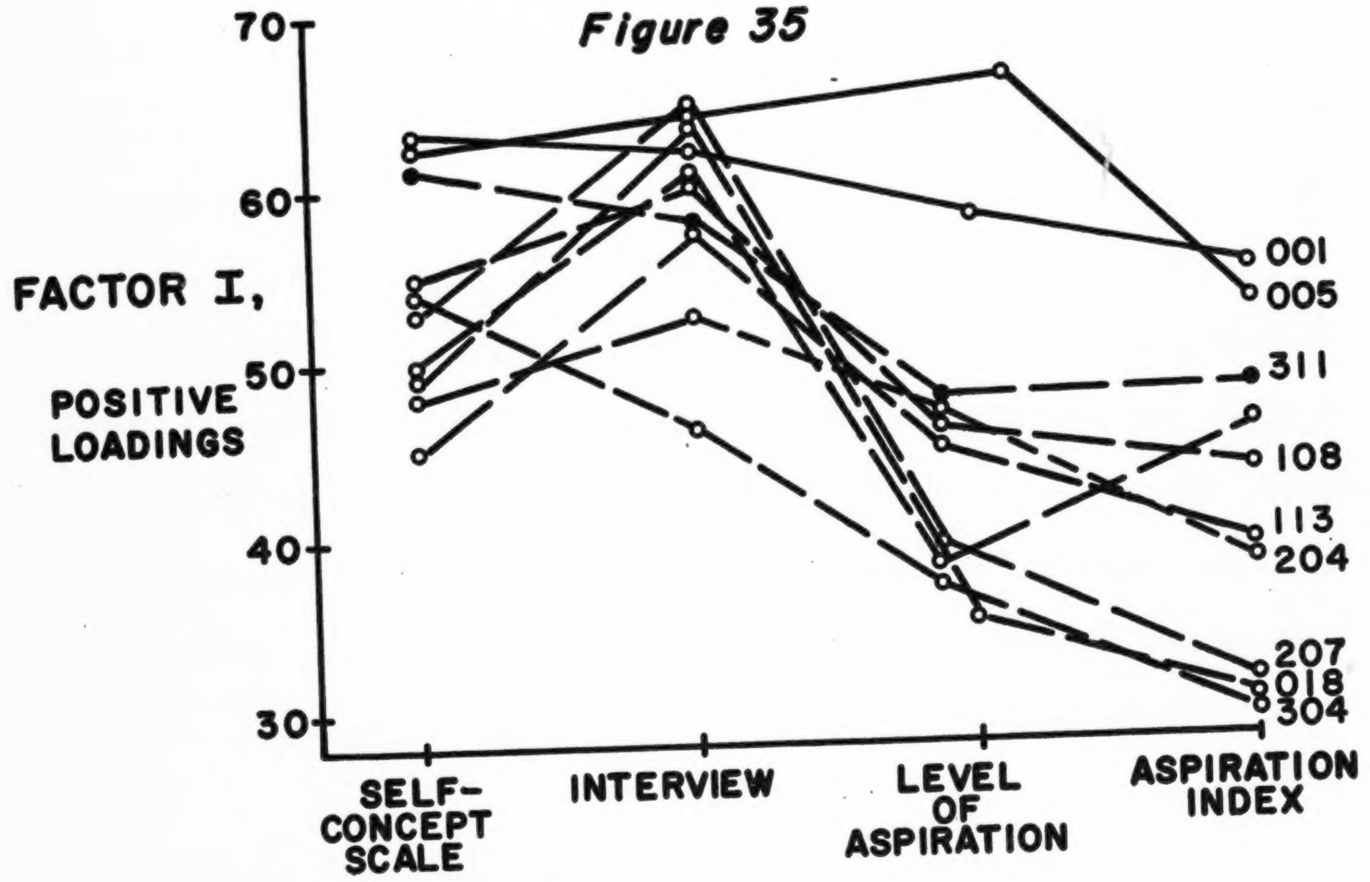
	Employability Status and Color						
	Negro			White			
Pattern	High	Borderline	Low	High	Borderline	Low	Total
Consistent High	6	0	1	0	0	4	11
Consistent Low	0	1	1	1	0	4	7
High Asp.-Low Self	3	0	0	1	0	0	4
Low Asp.-High Self	0	0	1	4	2	1	8
Depressed Int.	1	0	0	2	0	1	4
Unclassified	0	0	0	0	1	1	2
Total	10	1	3	8	3	11	36

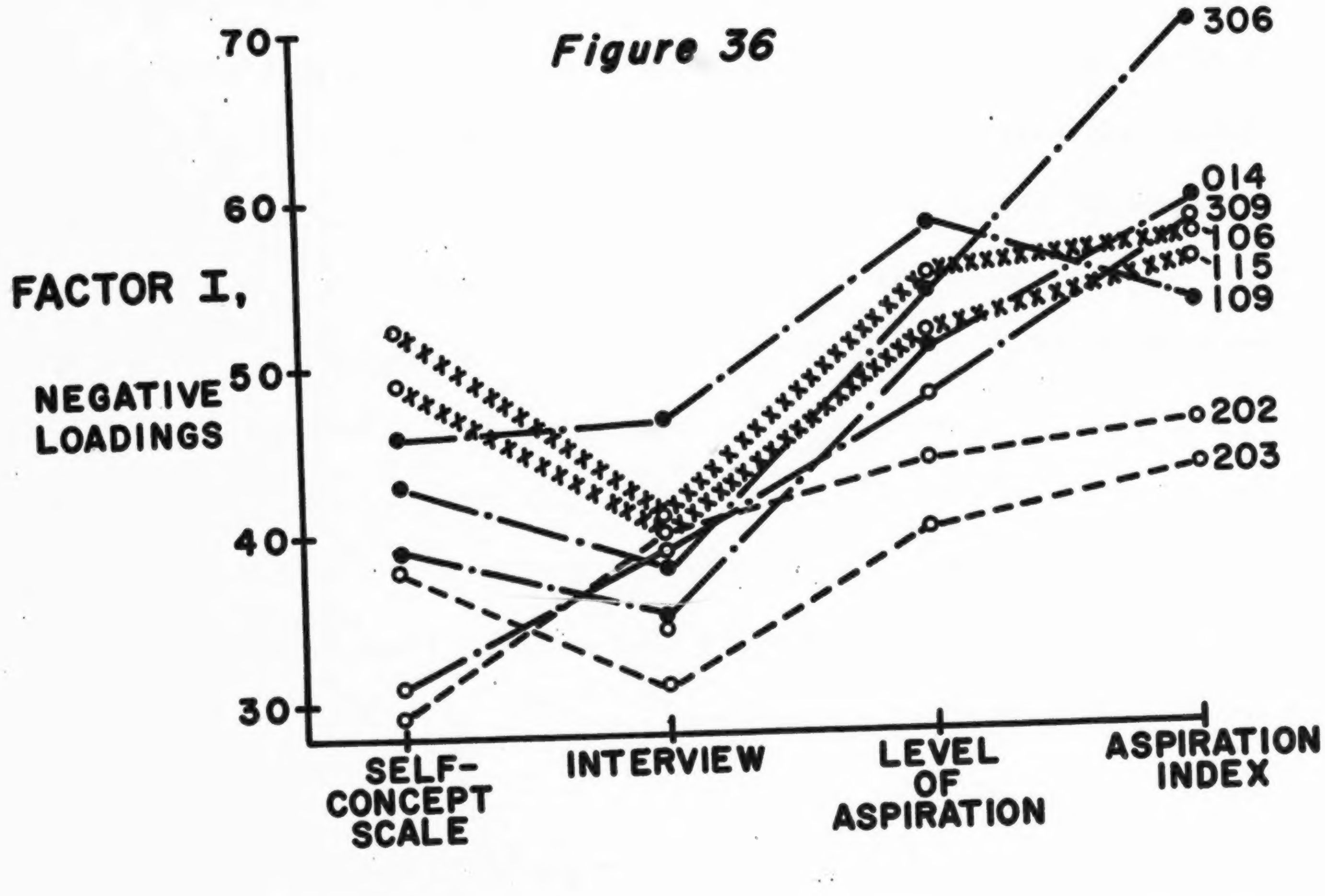
It is apparent that the different groups are characterized by different self-concept patterns. The high employability Negroes tend to have Consistently High self-concept patterns or, secondarily, High Aspiration, Low Self-Report patterns. In contrast, the high employability white subjects tend toward Low Aspiration, High Self-Report patterns. While there is no predominant pattern for the three low employability Negroes, the low employability whites bifurcate into predominantly two groups. These are a Consistent High pattern and a Consistent Low pattern. The Depressed Interview pattern appears to be a peculiarly white phenomenon with no particular preference for high or low employability. The patterns of two white subjects are unclassifiable.

If we collapse the table so that it reports only Negro or white frequencies irrespective of employability grouping, 71% of categorizable Negroes are either Consistently High or High Aspiration-Low Self-Report, while 78% of whites are in the remaining categories. Hence, we find that the moderator variable of color (or social class) lays bare a distinctive consistency of self-concept pattern among individual subjects. There is little overlap between the white and Negro subjects in their characteristic self-concept patterns.

The next question was whether these patterns which had been identified by visual inspection could be replicated statistically. An attempt to do so was made using the method of transposed or Q-type factor analysis. In this technique, the factor analysis is done, not on items of a test, but rather on subjects. That is, instead of seeing which groups of items cluster together or correlate highly with each other as we have done with, for example, the intelligence data, we ask which subjects tend to cluster together. Theoretically, this technique ought to identify those subjects whose patterns of self-concept scores are parallel. We would also expect a factor analytic technique to be more sensitive to somewhat subtle differences in the general

FACTORIALLY IDENTIFIED SELF-CONCEPT PATTERNS





characteristics of a pattern. To use the language of cognitive style, the visual inspection approach tends to be a scanning operation where small differences are submerged by overall gross patterns. For this reason it is sometimes called the "traumatic interocular technique," that is, you observe that which hits you between the eyes. In contrast, the process of factor analysis is a focussing operation, likely to identify distinctions among the patterns that were not made by visual inspection.

When the factor analysis was completed, the 36 members of the sample had been ordered on three major factors which accounted for 100% of the variance in the scores. Although our grouping into five distinct patterns was not replicated exactly, the factorial groupings were sufficiently similar to the visual ones to be quite confirmatory. Figures 35 and 36 show the patterns on four self-concept measures of the ten subjects who were positively loaded on Factor I and the eight who were negatively loaded on that factor respectively. It is quite clear that positive loading on Factor I represents a self-concept pattern where self-report measures of self-concept are high and aspiration measures are lower. This group includes all eight subjects whom we had previously categorized as High Self-Report, Low Aspiration, as well as two Consistently High subjects whose aspiration scores are lower than their self-report scores. As we had indicated with respect to this particular self-concept pattern previously, nine out of these ten subjects are white.

Examination of Figure 36 shows the corresponding patterns for those who load negatively on Factor I. It is clear that these pat-

○ WHITE
● NEGRO
——— CONSISTENT HIGH
— — — HIGH SELF REPORT, LOW ASPIRATION
—·— LOW SELF REPORT, HIGH ASPIRATION
- - - - CONSISTENT LOW
xxxxxxxx DEPRESSED INTERVIEW
·········· UNCLASSIFIED

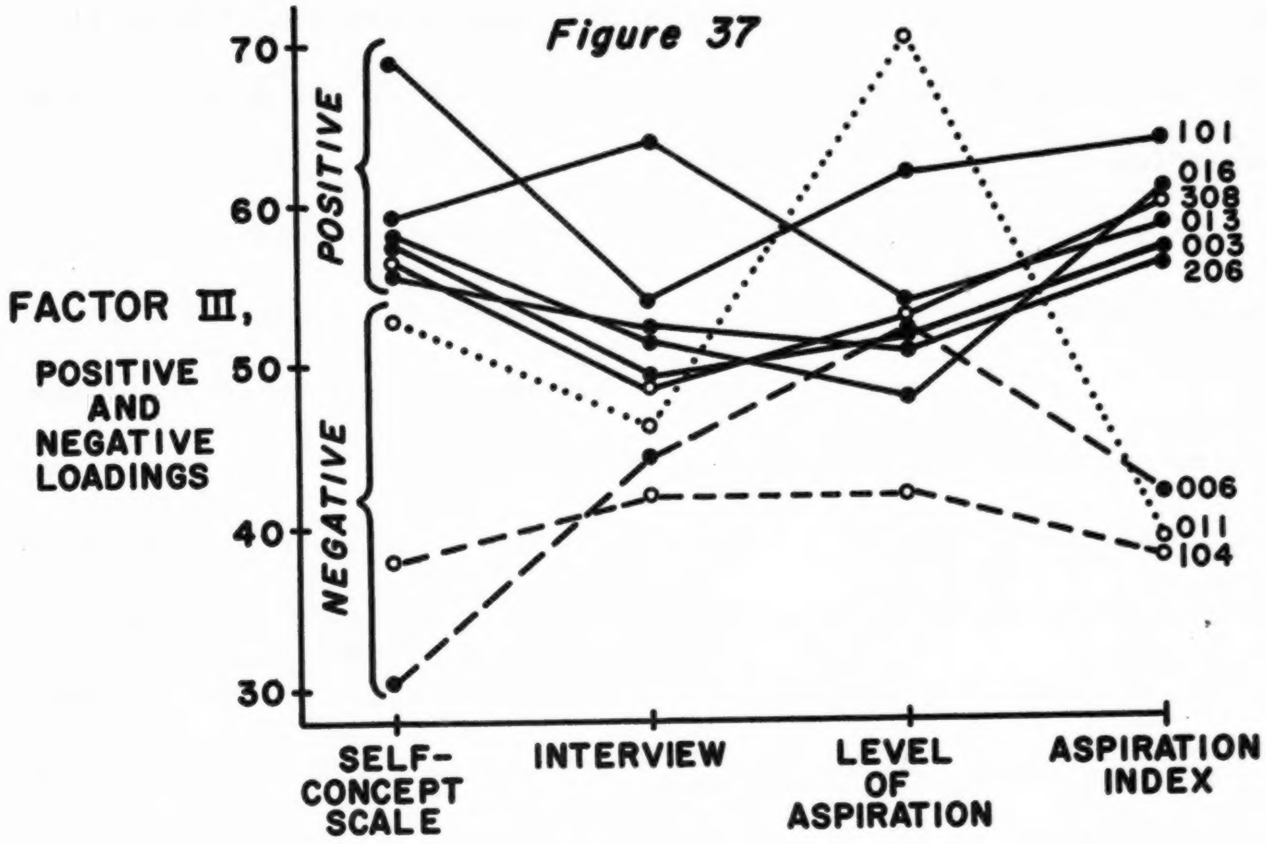


Figure 37

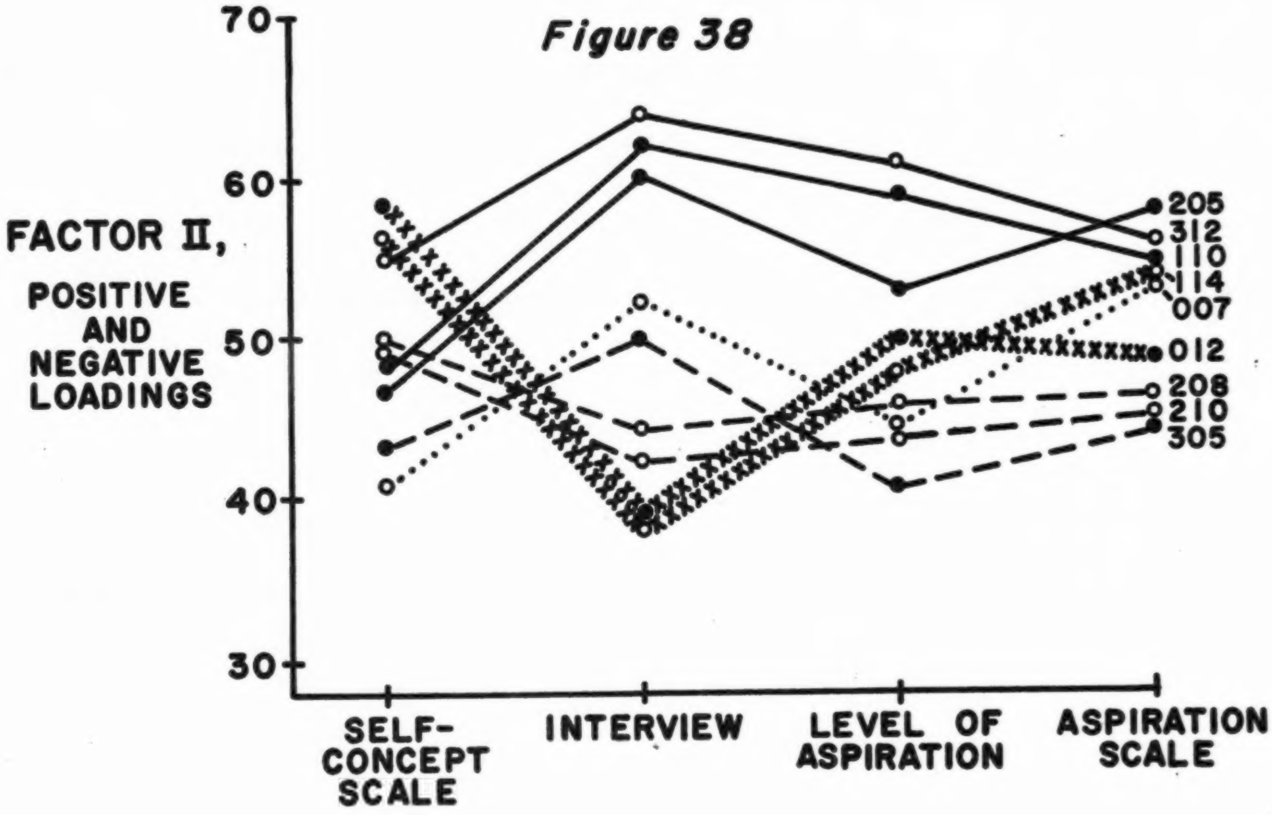


Figure 38

terns are the mirror image of those in Figure 35. These subjects have low self-reports with correspondingly higher aspirations. All four of the subjects previously categorized in the High Aspiration, Low Self-Report group are highly loaded on this factor as well as two subjects each from the Consistently Low and Depressed Interview categories. Examination of the latter four shows that each of them has a higher aspiration than self-report score.

We now turn to Factor III. This factor is remarkably consistent. Figure 37 shows all the subjects who load significantly on this factor. Six subjects load positively on Factor III. All six were categorized as Consistently High in our previous grouping and five out of the six are Negro. Clearly, positive loading on Factor III reflects consistently high aspirations and self-reports and is characteristically a Negro pattern.

Figure 37 also includes the three subjects who loaded in a significant negative direction on Factor III. Two are Consistently Low and their patterns stand out clearly in contrast to the subjects loading positively on this factor. The third is a bit puzzling. She is subject 011, was unclassifiable in the visual grouping and it is quite clear why this is so. With the exception thus of the one unclassified pattern, the respective positions on Factor III are quite clear.

Those subjects loading both positively and negatively on Factor II are represented in Figure 38. Subjects loading negatively on Factor II tend toward the low end of the self-concept pattern and were categorized earlier as either Consistently Low or Depressed Interview. All tend to have a relatively depressed interview score in comparison with their other scores. Those who load positively on Factor II are generally average to above average with a high score on the interview relative to their other scores. Three of the five subjects loading positively on Factor II were classified earlier as Consistently High, one Consistently Low and the other was not classified. Those loading negatively on Factor II tend to be white (3 of 4) while those loading positively tend to be Negro (3 of 5). Those loading positively can be identified in Figure 38 by their uniformly peaked Interview scores. Those loading negatively have the uniformly low Interview scores.

Factor III seems most sensitive to the workings of the Interview variable in contrast to the other three self-concept measures. All subjects who load on this factor were either classified as Depressed Interview earlier, or in one of the two consistent patterns. The factor analytic technique is very sensitive to small pattern differences and thus has included on this factor five subjects who appear to be more suitably classified into either the Consistently High or Consistently Low patterns.

We therefore find sharply contrasting patterns of self-concept in the separated white and Negro groups, which are generally confirmed by the factor analysis. Negro subjects who are high in employability tend either to have consistently high self-concepts or to be self-deprecating on self-reports while high in aspiration. In contrast, none of the high employability white subjects have consistently high self-concepts. Rather, white subjects who are highly employable tend either to have high self-reports with low aspirations or to manifest the Depressed Interview pattern. The low employability white subjects tend to be either delusionally high in their self-concept quite consistently, or consistently low. The low employability white subjects thus occupy two extremes of the distribution of possible patterns.

We also attempted two additional analyses. The first was the analysis of the self-concept patterns with scores on the drawings now included. This was attempted both by visual inspection and by transposed factor analysis. Under neither of these conditions was the analysis particularly fruitful. Since drawing scores were essentially uncorrelated with any of the other self-concept measures or employability, and further did not distinguish between the white and Negro groups, inclusion of the drawing scores in patterns generally tended to split already small groups into halves. The resulting classifications were always far too small to allow for any reasonable inferences concerning the meaning of the resulting pattern.

The second analysis attempted was to relate self-concept patterns from Year I to patterns from Year III. Although we did find that there was evidence of the kinds of changes we have observed in Chapter IX wherein high employability subjects shift from low to high scores on the Aspiration Index while shifting only moderately in level of aspiration ratio, the patterns which could be inspected visually were not particularly illuminating. The general picture was one of self-concept scores remaining relatively stable, as did interview scores, while level of aspiration and Aspiration Index scores tended to shift markedly.

This finding is consistent with the observation that the two self-report instruments had relatively high stability coefficients; +.69 for the self-concept scale and +.51 for the interview between Year I and Year III. Level of Aspiration, which shifted only moderately, had a somewhat lower stability coefficient of +.43. The Aspiration Index, which appears of all these indicators to be the one most sensitive to the subject's personal conception of his own vocational competence, changed most radically as reflected in its stability coefficient between Year I and Year III of .00. It would appear that the self-report instruments, which are most sensitive to the subject's judgment of the social desirability of responses, are those that remain most stable. A subject's perception of what other people want to hear does not change much as he matures or as he undergoes personal change. On the other hand, his underlying feelings about himself are closely tied to his changing feelings of personal competence. As feelings of personal competence change, the aspiration measures will change accordingly.

Discussion of Self-Concept Patterns

These different patterns for the Negro and white subjects are quite congruent with our expectations based upon the previous chapters. We observed that the Negro subjects, tending to be primarily lower class, came from home environments in which the expectations and aspirations of the family were not unrealistically discrepant from the general competency level of the youngsters. Such a lack of discrepancy would tend to foster a general congruence between the self-reports and aspiration levels of the subjects on the one hand and their actual competence on the other. The motivation to delude oneself or others would be quite low. If there is any delusion which the Negro youngster learns to practice, it is a self-deprecating one vis á vis the white man's world. That is, in our society a Negro youngster may often learn that it is unwise to speak too well of oneself, lest he be considered "uppity." We thus see that a secondary pattern for the Negro subject is one where a low self-report is paralleled by high aspirations. That is, the child is self-deprecating when asked directly by a white adult to state his own perception of himself, but in a setting where the confrontation is less direct, such as the level of aspiration situation, his true picture of his own competencies emerges.

In contrast, we have seen that our white subjects tended to come from a setting where the level of intellectual competence and general expectations of the family were quite discrepant from their competencies. Thus, even those white youngsters in our sample who are most competent judge their level of competence against the standards set by their families and tend to denigrate their own ability. They have probably been taught to put up a fairly good front. "Don't stand there looking dumb!" "When the man asks you something, pretend you know." But this apparent confidence is only a facade masking their underlying anxiety over what they perceive as their gross inadequacy. This is reflected in the fact that the high employability white youngsters tend to manifest the High Self-Report, Low-Aspiration pattern more than any other.

The low employability white subjects are in the most painful position of all. Their levels of competence are the most discrepant with the expectations of the environment from which they come. They appear to handle this great discrepancy by either of two basic strategies. The first is a wholesale denial of one's own incompetence. We thus find that a preferred self-concept pattern for the low employability white subjects is the Consistently High pattern. Equally preferred, however, is the Consistently Low pattern. This is the pattern of the white low employability subject who realistically recognizes his own general incompetence and reflects it both in his self-reports and in his goal setting behavior. Atkinson (1965) reports a parallel picture among individuals with a high fear of failure. They tend either to set unrealistically optimistic goals, or conversely, extremely pessimistic goals.

The findings on self-concept in this chapter are also congruent with research by others comparing lower class and middle-class youngsters. Getzels and Walsh (1958) found that there is a larger gap between the "personal hypothesis" and "expressed reaction" of middle-class subjects than of lower-class subjects. That is, the middle-class subject is more socialized and hence there is a larger discrepancy between what he actually believes and what he says. For the lower-class subject, this discrepancy is much smaller. Our findings are consistent with that position.

We have demonstrated in this chapter that an understanding of the self-concept of retarded adolescents can lead to important insights concerning their vocational development. However, we have observed that the self-concept is no simple construct, for which any self-report measure is a valid index. Rather, we have seen that only through very careful use of a wide range of self-concept-relevant measures can we effectively triangulate on this critical phenomenon. The meaning of self-concept must always be seen in the context of the type of person and the situation in which he is responding. We will examine some additional consequences of these differences in self-concept in Chapter XIV, the General Discussion.

CHAPTER XII

CASE STUDIES

In previous chapters, we have examined statistically the characteristics manifested by the subjects in this study over the years of the project. Yet, there are important differences between the statistical description of the general characteristics of a group of youngsters and the case descriptions of particular individuals.

The present chapter consists of four case studies. The first three were written in 1965 by the individual who knew the subjects of the study most intimately, Daniel Kuzuhara. Mr. Kuzuhara served as supervisor of the Vocational Development Center program from 1962 through 1965. The fourth study was completed in 1967 on the basis of anecdotal and psychometric records. Mr. Kuzuhara's case studies are reproduced as he wrote them, only the actual names of the subjects involved have been changed.

Mike

Mike, whose code number for research purposes was 104, was a member of the old experimental group who began the program with both production and diagnostic ratings below the median for the total group. Although he showed marked improvement over the years of the program, his gains were not sufficient to bring him above the group median in Year III. His production average rose from .33 in Year I to .62 in Year III, and his average rating shifted from a very poor 161 to a much improved 101. Year III employability index of 99.01 categorized him as a member of the low employability group, if only barely. However, as Kuzuhara indicates in his case study, the growth observed in the workshop program was unfortunately not reflected outside the program. All scores for each year of the program for every subject, including Mike, are reproduced in Appendix 11.

We shall now examine the case of Mike.

General Background

Mike was referred to the program from the Educable Mentally Handicapped Division of the Chicago Public Schools. He was well into his 15th year at the time of his entrance into the work program. At the age of five, Mike was enrolled in kindergarten, but was removed a few days later due to his immaturity. He was then placed in a private nursery school for one year after which he returned to kindergarten. He remained in first grade for a year and then was transferred to ungraded classes for retarded youngsters after a psychological examination revealed an I.Q. of 74. Mike remained in special classes up to the time of his referral. The latest school examination in 1961 gave him an IQ of 63. His academic achievements were at the 2nd grade level, slightly more than a year below grade expectancy for his mental level.

School reports describe Mike as "immature for his age" and "on the whole . . . well behaved." In testing situations, he exhibited restless and distractible behavior, wanting to handle various items used in testing.

Medical information states two to three years delay in physical growth. . .that "patient shows no neurological phenomena. Bone growth was delayed which suggests hypothyroidism." He has been on thyroid for a number of years. "There is also a moderate speech impediment. Mike's physical appearance is that of a small, plump young boy with soft muscles and he is quite delicate looking."

Mike comes from a highly stable middle-class family. Parents have been married for 26 years, and the family has lived at the present home for 23 years. Both parents are high school graduates. The father works as a shoe salesman, an occupation at which he has worked all his life. Mike has an older married sister who is 11 years his senior. She has worked as a nurse and a teacher, but now remains at home caring for a baby daughter of whom Mike is quite fond. Because of the age difference between Mike and his older sister, the parents related that they tend to look upon him as an "only child."

Work Behavior: Summer 1962--Spring 1963

Productivity

Production on simple packaging, packing, inspection, and assembly tasks during this period showed a considerable amount of fluctuation. However, his average productivity over the period showed a gradual increase. An example of this is illustrated by his production record on a simple packaging operation over a two-month period. His first performance indicated that he had produced five boxes an hour. A month later he jumped to nine and, a month after that, he produced 7 boxes an hour. During the first summer, Mike worked at approximately 1/5 to 1/4 of what were considered industrial rates and was among the poorest producers in the program. Six months later he gave some evidence of occasionally reaching the average productivity of the group he was working with.

There appeared to be a number of factors which accounted for Mike's low productivity. During the early part of the program he was readily distracted by noises both in the work situation and outside. He was also preoccupied with keeping himself clean. When the task involved the use of solvents, for instance, he appeared fearful of making contact with the chemical and worked with extreme caution. His work methods were highly inefficient, and he spent an inordinate amount of time unnecessarily arranging his materials. Perhaps one of the outstanding factors contributing to his low performance was the absence of a flow of movements. He tended to handle each object with a marked deliberateness, regarding it with care and delicateness.

However, by the end of this period Mike displayed a diminishing amount of such characteristics, although they continued to be manifested from time to time. This behavior was observed as having a direct bearing on his production.

Quality of Work

Mike displayed a great deal of difficulty in presenting good quality work, especially when a new task was assigned to him. Even when he had been working on a given job for a number of weeks, Mike was extremely slow in mastering the quality requirements. In a mailing task which required his placing three items in an envelope in a given fashion, he exhibited great difficulty in accomplishing this. Likewise on a plastic glueing operation, Mike consistently failed to apply sufficient solvent so that the pieces quickly came apart. Whenever Mike was corrected, he appeared to become either quite defensive by ignoring the demands, or he would sit at his table appearing quite frightened and lost.

Mike's inability to do good quality work seemed related largely to his anxieties rather than to a lack of basic comprehension of what was expected of him. For instance, his poor work on the plastic gluing operation appeared to stem from his notable caution around getting soiled.

Relationship to Supervision

Of all the youngsters in the program, Mike required the greatest amount of supervisory attention during this period. During the early part of the program, he constantly sought out work supervisors for contacts unrelated to the work at hand. He often complained of being tired or asked the foreman to do his work for him. He frequently asked the foreman for the time and whether he could take home various objects. The latter was requested in a highly secretive whisper. Mike often lingered after work so that he might get a ride home from one of the staff. Mike appeared to need a considerable amount of protection from his fearfulness around vigorous co-worker activities. He would frequently ask the foreman to stop such activities.

During the early part of the program, Mike exhibited extremely fragile behavior whenever the slightest work pressure was imposed on him. His initial reaction was to flee from the work situation ("I'll sign out.") Later he managed the pressure by remaining on the job, but he exhibited tense, evasive, and frightened behavior in doing so. One foreman's observation approximately seven months after Mike began the program states: "He continues to seek out praise . . . can take small doses of pressure on simple jobs . . . anything more and he falls apart--scared, blank look, head shake." This inability to absorb foreman interactions was also notable whenever suggestions were made to Mike around improving his method of work during the early part of this period.

However, approximately six months after the beginning of the program, Mike began slowly to show evidence of greater autonomy and ability to incorporate foreman efforts at enhancing his productive role. The complaints diminished. Mike now took public transportation home along with male peers; he showed less need for foreman protection; he began to make use of foreman work suggestions more; he accepted criticisms more comfortably; and he showed for the first time an ability to mobilize his energies under even more close work pressure. Also, Mike's compulsive arrangement of work materials began to be seen less frequently.

These changes meant that the work supervisor's role became increasingly addressed to work-related interactions, since Mike's need for the foreman as a parental figure, as nourisher and protector, no longer commanded dominance over his behavior in the work situation.

Relationship to Co-Workers

The earlier anxieties Mike conveyed concerning rough and noisy co-worker activities, especially during break time, frequently caused him to retreat from the work area into the office to be with staff personnel. Mike's speech impediment and child-like behavior also became the target of teasing by more mature male workers and caused further separation from the group during the early part of this period. Whenever he was teased or handled somewhat roughly, he would react with a hollow, ineffective, "I'll kill you" which was responded to with amusement by co-workers.

As Mike's dependence on the foreman diminished, he became increasingly involved in social interaction with peers. He exhibited child-like erotic interests in a considerably more mature young lady. He also began verbally to strike back at his tormentors, including the "shop bully." On one or two occasions he was seen physically retaliating.

Approximately six months after the program began, Mike was observed, for the first time, competing with another male worker around production. Somewhat later he began a relationship with another male worker who was passive, small in stature and very work-oriented. The relationship seemed to enable Mike "to strengthen his ability to work and to see himself as a worker." At a later date, when Mike and his friend were assigned to the same task, they were observed discussing the best work method and mutually agreeing upon a uniform system. Being aware of the benefits deriving from this relationship, the staff made it a point to assign the two boys together.

By the spring, foreman notes report that Mike "seemed less annoyed by acting-out behavior . . . less teasing . . . Real gains in comfort with co-workers."

General Observations

General work attitude observations of Mike substantiate the behavioral change patterns observed in the dimensions already discussed. In the early phases of this period, Mike appeared preoccupied with threatening forces acting upon him, the management of which prevented him from any real learning in the work situation. It was also observed that Mike spent a considerable amount of time verbalizing about work, but achieved little. He fatigued easily and was fearful of extending work energies. However, a gradual interest in his performance is noted.

By the end of the sixth month, Mike displayed pride in his work for the first time. This achievement was accompanied by his remark that he was very tired but he "asserted that he'd make it to quitting time--a self-imposed goal." More determination is displayed following this in a stapling operation which required a certain amount of strength. Mike appeared to feel challenged by it and the foreman noted that . . . "a kind of assertiveness is apparent."

A later observation notes: "Mike appears more confident that he can be a good worker (a contrast to his previous statements that he was already a good worker) . . . there is more communication around work, less ego-centric."

Work Behavior--Summer, 1963-Summer, 1964

Productivity

Mike continued to make gains in productivity during most of this period. But some of the fluctuation seen earlier continued to be displayed. During the second summer, he gave evidence of reaching close to two-thirds of industrial minimum rates on two jobs, but on others he showed little improvement. Mike also began to move up his productivity rank from among the lowest to occasionally among the highest in the shop. On the identical simple packaging job on which he had worked during the first period at 9 an hour, Mike produced 18 an hour around the end of the program, a rate that is considered above the industrial minimum. However, this behavior was noted on a task with which he had great familiarity. On relatively new tasks, even during the last summer, Mike performed at rates considerably below industrial expectations.

Quality of Work

Mike's quality of work appeared to show consistent improvement throughout this period. One of the major factors contributing to this picture was Mike's display of a greater awareness of quality needs and his corresponding ability to correct his own work.

Relationship to Supervision

Generally, Mike displayed increasing ability to work independently of supervisory support and special attention. His response to work pressure during the early part of this period tended to be a kind of impatient, "Aw right, aw right!", a contrast to his earlier expression of marked anxiety and "freezing up" whenever even the gentlest work pressures were exerted. This ability to tolerate greater pressure was also reflected in his increasing capacity to respond to fairly vigorous production challenges by the foreman towards the end of the program. His need for protection from foremen diminished so that his seeking out of exclusive contacts correspondingly became less evident. This meant that Mike's relationship to supervision now related mostly to the work activity. In other words, Mike not only continued to make gains in this aspect as seen towards the latter part of the first half of the program, but he appears to have stabilized these gains towards more autonomous work behavior.

Relations with Co-Workers

Mike continued to manifest an increasing comfort in the co-worker setting which began to become apparent towards the end of the first half of the program. His social bond with the same young man mentioned earlier became strengthened and he extended his relationship to other boys who were considered among the less adequate. Foreman observations point out that there now "appears to be less teasing and excitable child-like threats (I'm going to kill you)." When teasing did occur, he gave evidence of handling it without the excitability and hollow threats seen earlier. Mike also displayed the ability to enter into fairly mature conversations with girls, which represented a form of social reciprocity not observed previously. However, Mike's greater acceptance by peers and accompanying increase in socialization during work tended on occasion to interfere with his focus on the productive aspects of the work situation. On the other hand, Mike began to participate in various motor skill games during breaks for the first time. This behavior seemed to express the growing confidence in Mike's ability to perform with his total body, as opposed to restricting his feeling of competence to his hands and fingers.

Staff observations tend to support the conclusion that as Mike gained in demonstrating more mature behavior, in large part reinforced by his increasing ability to produce in the eyes of his peers, his acceptance was facilitated. By the end of the program Mike appeared to add more substance and social confidence in his behavior so that he tended more to convey the attitude that he possessed some influence in the co-worker setting. This was particularly notable in his behavior on group tasks. This is in marked contrast to his behavior early in the program which exhibited a considerable amount of defensiveness, of being attacked and acted upon by co-workers.

General Observations

Mike's behavior during the second half of the program showed steady growth towards assuming greater work-like maturity and an emerging understanding of the worker's role. His approach to a given task now conveys a greater sense of mastery over the material he is working with. Although his work methods still occasionally display highly uneconomical organization, especially on new assignments, by the end of the program his compulsive arrangement of work materials greatly diminished and he achieved a flow and rhythm of movement which contributed to his greater productivity.

There is some evidence to suggest that Mike tends to show regressive behavior when there is a shift in staff such as that which occurs during the annual diagnostic assessment sessions. During these periods, some of the earlier forms of behavior around supervisory relations have been noted, but they tend to be of less severity and more momentary in quality.

Although Mike displayed considerable movement in maturity and understanding of the worker role, it was the staff judgment that he should continue to enjoy a positive work experience in a sheltered workshop. With greater maturity and confidence enhancement, it was the staff's assessment that Mike may eventually show potential to function in some well protected work situation in the labor market.

Counseling Activities--Summer 1962-Spring 1963

Early counseling contacts with Mike revealed a highly distractible, restless young boy who was extremely child-like in his responses. He constantly picked up various objects in the room and shifted from subject to subject. He talked in a rather explosive, emphatic manner. He related that he played "cowboys and Indians," "Whirlybird," and spent a good amount of time playing with his police car which "had sirens."

His observations of peers in the school and home situation in many ways appeared to reflect his early behavior in the work situation. He singled out a boy he disliked because "he swears, he hits and punches boys and girls." He also expressed the feeling that "other kids think I'm scared and fat".

These early contacts also communicated his sensitivity to pressures upon him, particularly where speed was a factor. For instance, he expressed negative feelings about teachers who "made me walk faster and faster." He also related that "If I stop working the boss would phone my mother, and she would be mad." On the other hand, he also expressed a need to be in control of things in stating his vocational aspirations to be a policeman or a bus driver. Regarding the latter, he said he liked being a bus driver so that he could "put his feet down and go very fast." He related that he wished he could be "two Mikes so I could be a policeman and a bus driver at the same time." He remarked that sometimes he dreamed that he was two persons.

Vocational counseling during this period was virtually prevented by Mike's preoccupation with noises, lights, and other intrusions in the interview situation. For instance, when the counselor asked him about his work, he responded that "I like to work, but why do the doors keep shaking?" "Work? yeah . . . there's that noise . . . do you have the time?"

Summer 1963-Summer 1964

Counseling contacts during this period showed a marked improvement in Mike's ability to focus his attention, and by the end of the program he began to exhibit more reflective responses. Only occasionally did he convey negative reactions about pressures in the work situation. He once expressed the feeling that he didn't like one of the foremen snapping his fingers at him to work faster.

During this period, he momentarily shifted his vocational goals to his wish to become a mechanic like his "brother" after he graduated from high school and attended a trade school. But by the end of the program he returned to his earlier wish to become a bus driver or to sell shoes like his father. These later contacts also revealed what seemed to be a greater social awareness of his status in school. Whereas previously he seemed happy in ungraded classes, he now began to express some discontent with them, indicating that people in ungraded classes have "something wrong with them". In a later interview at the end of the program even greater negative statements were expressed by Mike who related that he would like "to change my brain . . . when I was born it didn't work right. When I was five it acted like three." These more negative remarks about himself may have been partially triggered by his recently being informed that he "got kicked out of school." This was a termination from elementary school with no recommendation for advancement into high school due to his poor academic achievement and immaturity.

In spite of the fact that Mike showed greater comfort and ability to focus his attention in the counseling situation, his level of maturity prevented any meaningful discussion around his work role.

Counseling Activities with Parents--June 1962 to Spring 1963

From the outset, Mike's mother expressed very positive feelings about the program. In regard to Mike, she related that "I think he's really going to like it." However, her main concern appeared to be around her hope that Mike's participation would enable him to "socialize" with the other youngsters. In these early contacts she focused on Mike's lack of friends and his need to give virtually "anything" to secure friendship with peers.

On the other hand, Mike seemed to be reasonably accepted by the parents, "but tends to be treated like a baby." There appears to be some conflict between the mother and father pertaining to their handling of Mike. In a counseling interview, the mother complained about Mike's father being overly cautious in protecting Mike from any relatively heavy chore at home. Even when Mike seems to be managing a task, she related that the father would interfere and say, "Here, Mike, let me do it. You might hurt yourself." Nevertheless, the mother tended to dominate Mike's behavior whenever the two were together in the interview situation. She would tell Mike where to sit, when to leave, and when to talk. She expressed, over a number of contacts, her concern about helping Mike become more assertive and self-protecting.

Contacts during this period showed that the mother observed virtually no change in Mike's behavior since his participation in the program. Mike also rarely brought home any discussion of his experience at the workshop except to point out that he liked the shop supervisor and that he "talks to a boy". The mother appeared to have a good grasp of the program's objectives and expressed hope that Mike would eventually become self-supporting. The parents were responsive to interview appointments and attended all parent group meetings.

Summer 1963-Summer 1964

For various reasons contacts with the parents diminished during most of this period except at the very end of the program when the question of Mike's vocational future was raised in view of his termination from school. Regarding this latter activity, there was a good communication and realistic appraisal of Mike's capacities by the mother.

During this period, the mother's reports about Mike's behavior in the home situation remained principally the same as in the previous months. Mike's interests, his lack of friends, and his need to secure friends through giving various gifts, were still in evidence. On the other hand, there seemed to be an increasing effort on the parents' part to move Mike into the larger community under his own power. An interview during the second summer indicated that the mother was now constantly pushing Mike towards greater autonomous activities. "She continually works at encouraging him to develop independence in simple every-day matters, instructing him on how to go to the barber shop in a new neighborhood, patiently going over the whole procedure, but encouraging him to go on his own." In an interview during the last summer, it was reported that the father was now taking Mike horseback riding and bowling.

Summary Interpretations

The preceding discussion tends to suggest that the great amount of growth Mike exhibited in the work situation is only minimally reflected or translated into other spheres of life such as that reported by the parents.

In the work situation, it appears quite evident that Mike depended on staff protection and nurturance to a large degree. As this need diminished, there seems to have been a shift to greater relationships with co-workers. But this was made largely possible, it would seem, by Mike's selection of a male peer who in many ways portrayed similar characteristics to him and who in some ways served as a work standard for Mike. To maintain the relationship Mike was compelled to work like his friend. One interpretation of the pattern emerging here was that the combination of staff support and protection together with Mike's newly formed relationship formed the basis on which increasing productivity and related feelings of confidence began to emerge and to extend themselves. Mike's history reveals a considerable amount of difficulty and failure with peer relations. In the work situation he was able to achieve some success in this regard and developed it to some degree. His greater productivity and less child-like behavior, in turn, appeared to offer more acceptance by his peers.

His achievements appear to be accompanied by a rather marked change in seeing himself as being better protected, hence less the object of attacks by noises, co-worker activities, and work pressures. Towards the latter part of the program, Mike began to display evidence that he had acquired some sense of personal influence on the work situation.

Although the parents did not report any awareness of major shifts in the home situation, it is noteworthy that towards the very end of the program some evidence began to emerge that the parents were making more concerted efforts to encourage Mike to function more autonomously in the community.

It seems fairly clear that Mike is an extremely immature young man who, when placed in an environment which demands greater maturity, such as the program, becomes markedly frightened and unable to cope with the situation unless highly supportive handling is provided over a long period of time. He demonstrated that he can eventually function optimally when such an especially benign environment is afforded, but his basic immaturity appears severely to limit his ability to generalize and conceptualize his experience in a vocationally relevant fashion.

For instance, whenever regular staff was not at hand, he displayed much of his earlier behavior; or when he was assigned to a new task, again much of the earlier compulsiveness, slow deliberate movements and poor quality work reappeared. In the counseling sessions, the discussions never achieved a level on which work could be discussed in any mutually understood form due to Mike's child-like concepts and feelings.

Mike made tremendous gains in the protected work situation of the program, but they tended to remain within a narrow continuum which is not conversant with the range of expectancies in the regular labor market.

In July, 1967, Daniel Kuzuhara spoke to Mike on the phone as part of the follow-up interview procedure. Mike had, by this time, been out of school for three years. His only work experience was in a sheltered workshop for retarded youngsters. He is still virtually a social isolate.

When asked about his future vocational aspirations, he reiterated a wish to be a shoe salesman. "I want to follow in my father's shoestep". Beyond that, his few fantasies about the future are quite vague. Kuzuhara summarizes his conversation with "pretty much the 'same Mike', no significant gains seen." Thus far Mike's rated status in the low employability group has been confirmed.

Barbara

Barbara, whose research code number was 113, was a member of the old experimental group. In the first diagnostic assessment period, she was at or above the median on all work-related measures. She maintained and improved her position during the rest of the program. In the Year III diagnostic assessment, her rated employability index was 119.37, among the highest in the shop. This reflected both her high production average (85% of average industrial rates) and her excellent diagnostic rating of 89. Scores on the other variables in the competence cluster were also above the median, with the exception of WISC IQ. This white female was thus judged a member of the high employability group.

General Background

Barbara was referred by K______ School where she was enrolled in ungraded classes. At the time of entry into the program she had just reached her fourteenth birthday. Barbara had attended graded classes up to the fourth grade, but was approximately three years behind due to repeated grades and frequent transfers from school to school. In 1960, two years before she entered the program, she was placed in Educable Mentally Handicapped classes where she was situated at the time of referral to the program. This school placement was based on a testing which showed an IQ of 66 and achievement scores indicating her performance at third and fourth grade levels, slightly above the grade expectancy for her mental level. An early school report described her behavior as "a nervous child who is easily frightened . . . shy . . . needs constant encouragement from the teacher, extra help. . . ." One of the main problems in school was described as "inattendance" due, according to Barbara, to her fear of teachers "hollering at me."

Barbara's father and mother came from Mississippi in 1952. There is a sister who is two years older and a sister eight years younger. The father is a high school graduate who works as a fork-lift operator and appears to have a relatively stable work history. The mother works at the same plant on the assembly line. The mother achieved ten years of schooling and the older sister terminated her education after the third grade.

There is some indication that Barbara suffered from jaundice and had episodes of high fever in her early years, but her present health is considered good.

The father reacted very favorably to our explanation of the program in the intake interview, taking off from his work to meet with the staff. An interview notation at the time stated that he was "interested in helping his daughter and realistic about her vocational limitations."

Work Behavior: Summer 1962-Spring 1963

Productivity

From the outset Barbara was a fairly high producer but her productivity tended to fluctuate. She was fastest on a simple packaging operation, but extremely slow on an inspection task which required the use of a balance scale and judgment in determining quantitative correctness of the item under inspection. This was seen as an indication of her initial uncertainty and lack of confidence. Fluctuations in her productivity appeared to be related to her mood swings which played a rather prominent role in her capacity to produce during this period of the program.

Quality of Work

With some exceptions the quality of Barbara's end product was generally acceptable, although her organization and the neatness of her work area tended to be rather sloven.

Supervision

Initially Barbara remained to herself, rarely seeking foreman contact unless necessary. However, as the work supervisors became increasingly aware of Barbara's depressed, ruminating behavior, supportive contacts were made. At first unresponsive, she gradually began to react until the client-foreman relationship emerged as the central pivot around which her work behavior revolved. During this period her main contact was with the female foreman. Approximately six months after the beginning of the program, the foreman noted that "Barbara has too many needs around support to be involved with her concept of herself as a worker." It was fairly evident that Barbara displayed her highest productivity when the foreman worked alongside of her. Barbara also became very threatened whenever the female foreman left the work situation to interview or test another female client.

However, toward the latter part of this period, Barbara also extended her need for a relationship to the male supervisor and made many friendly gestures. These gestures were essentially giving ones, such as offering a piece of thread to him. They indicated feelings of comfort with him. By the spring the staff noted a gradual decrease in Barbara's seeking out of supervisors in the work situation. Related to this was her slowly becoming more active in co-worker interaction.

During this period work pressures were kept to a minimum since Barbara tended to personalize them and feel hurt by any suggestion that she should work more quickly.

Co-Worker Relations

During the early part of the program, especially during the summer session, Barbara remained aloof from her peers. During break periods she was often seen sitting by herself "staring into space" with her mouth held open. As she gained in comfort, primarily through supportive foreman contacts, she slowly began to interact with co-workers. These initial interactions appeared around her correction of others' social behavior. There seemed to be great concern over "proper behavior." On other occasions Barbara expressed anger toward others over very minor incidents. While she made few contacts with boys, she appeared most threatened by the girls and often made critical comments about them to the foreman.

During most of this period Barbara displayed difficulty in working cooperatively with others. But by late spring she began showing evidence of working with others quite smoothly, even with the girls with whom she had previously exhibited the most difficulty. Related to this were staff observations of Barbara's display of reaching out to others, such as bringing Valentine cards for everyone and initiating conversation, especially with boys.

General Observations

In spite of Barbara's apparent preoccupation with non-work related happenings, she appeared to have a solid investment in the program. Her attendance was virtually perfect. It was noted that Barbara frequently called home and after doing so appeared quite upset. She seemed overwhelmed at times and foreman notations mention that "she would occasionally cease work . . . and hold her head with her hands. She doesn't seem to understand what is happening around her or to care."

Work Behavior: Summer 1963-Summer 1964

Productivity

Considerable improvement was noted in Barbara's productivity during the latter half of the program. Productivity became very stable and remained at the top of the group. It was observed that she performed best when expectations from the foreman for productivity were high, a marked contrast to earlier picture in which she functioned best when supportive, non-pressuring supervision was provided. Her work organization became more efficient, this being accompanied by considerably more smooth, economic work methods. The staff worked closely with Barbara along these dimensions, the immediate objective being to help her achieve greater productivity and related ego gratification and strengthening.

Quality of Work

Quality of work also improved uniformly.

Supervision

Although Barbara continued to show some evidence of a personalized relationship with the foremen (e.g., "I'll do it for you."), on the whole she made great strides in this area. She no longer required the highly specialized supportive supervision seen earlier. The need for praise and sensitivity to criticism and pressure were no longer so prominently displayed. A foreman note during the last summer states that "she uses her own initiative and discovers the best work method by herself." The early attachment to the female foreman now appeared replaced by "friendly, appropriate . . . to all foremen in the work situation. She doesn't seek out supervision unnecessarily."

Co-Worker Relations

Barbara's co-worker relations during this period shows greater stability and acceptance. Usually chosen the chairman of various committees, she was perceived as the work model by other clients. She gave evidence of being helpful to others, especially to the new youngsters who joined the group. Flirtatious interactions with boys entered the picture but did not interfere with the work activity. On the other hand, her social contacts with peers took on a more mature flavor. Being knowledgeable of current events, she would often engage others in conversation about various happenings. During this period she also achieved warm associations with the girls and functioned as the leader in the group of girls.

General Observations

Staff observations during the last summer of the program state: "She has enjoyed the workshop and sees it realistically. Not only has there been great improvement in Barbara's working habits, social poise, and attitudes, but her physical appearance has also taken a pleasant change. She wears her hair in a short stylish fashion. She has taken off weight and has acquired a glowing complexion."

Counseling Contacts: Summer 1962-Spring 1963

The intake interview revealed an "extremely passive . . . almost vegetating" young lady who appeared "very unenthusiastic" about her participation in the program. Her appearance was poorly groomed. She seemed "slow-moving . . . as if to try and stay out of the way of other people." She stated that she would like to become a designer for baby clothes, or perhaps a model.

Later interviews showed an increasingly spontaneous demeanor and confidence, but also the unfolding of many conflicted feelings. For example, Barbara spoke hopefully of passing some tests for high school entrance. "I have a feeling I'll pass them. I don't know why, I just think I will." On the other hand, Barbara began to bring out a considerable amount of material around her interest in fires and violence and frequently reported news about mothers who had killed their babies, all in flat "emotionless" fashion. Subsequent contacts showed Barbara's deep concern over her older sister's illegitimate child who was living in the home situation. Strong religious feeling began to be expressed, suggesting that Barbara felt that her sister had "fallen" and was being punished for her irreligious ways.

The feelings were supportively handled by the counselor with a minimum of interpretation to Barbara. However, other happenings in the work situation, such as Barbara's interruption of a conversation the counselor was having with another female client, were actively explained by the counselor who pointed out the social inappropriateness of her behavior. Barbara responded very well to these efforts on the part of the counselor. During this period the counselor was also alert to reinforcing any effort on Barbara's part to improve her appearance. Barbara reacted very positively to this, showing substantial changes in her appearance and seeking compliments from the counselor.

The counseling contacts during this period showed a marked change from Barbara's earlier extremely passive, "lifeless" behavior to the later indications of a young lady more expressive of feeling, albeit conflicted, more confident and reaching out and more able to absorb and incorporate the reality meaning provided by her counselor. Barbara was not yet emotionally prepared to move into discussions of vocationally relevant material surrounding her workshop experience and its meaning in the broader context of the working world.

Counseling Activities: Summer 1963-Summer 1964

During the first summer of this period, Barbara continued to express strong religious feelings. She remarked that the greatest change she hoped for was to "become a Christian . . . and living with Jesus in your heart." In subsequent contacts, however, such references were no longer made. Barbara also exhibited a decreasing need to maintain exclusive possession of the counselor. Increasing confidence was also expressed, for instance in her attitude towards ungraded classes as being too slow, "babyish," and in her eagerly awaiting entrance into high school. In a diagnostic interview with another staff person, the latter noted that Barbara is the "most poised person I have met in our workshop . . . she has a fairly good chance of making a relatively happy adult adjustment."

Later counseling contacts, which were now less frequent, pertained to helping Barbara handle her feelings around boy-girl relations in the work situation and in beginning to help her point the meaning of her present work experience toward future vocational plans. By the last summer of the program, she had discussed the possibilities of doing factory assembly and packaging work, but also expressed the hope that she would graduate from high school and work in an office. She related that she was taking typing lessons in school with this objective in mind. In a contact with Barbara's counselor at the high school, he reported that Barbara was doing extremely well and was taking virtually all regular graded high school courses.

The counselor's notes from the last interview with Barbara during the program state: "She was calm and relaxed. She spoke clearly, was pleasant, fairly bright and well adjusted. On the whole Barbara is quite realistic about herself and the meaning of the program."

The counseling activities during this latter period suggest that Barbara was able to free herself from her previous self-preoccupations sufficiently to turn toward handling of more vocationally relevant material. The increasing evidence of confidence, poise, and reality orientation point to her having achieved greater integration, balance, and forward "life momentum." Her vocational aspirations have become more solidly planted on the ground, based more on achieved performance.

Contacts with Parents: Summer 1962-Spring 1963

Beyond the intake interview and the yearly home visits, the parents did not respond to staff invitations for individual and group parent sessions. However, brief contacts were made with the parents when they brought Barbara to the workshop, on occasion coming onto the premises upon Barbara's invitation to them to visit the shop "to see the kind of work I'm doing."

During the first visit, the staff person observed a very close relationship between Barbara and her mother. The home atmosphere was described as "easygoing, warm." Bibles and other religious literature were prominently displayed in the front room. According to the parents, Barbara appeared to be without social contacts with peers. The mother remarked that "Barbara don't make friends with nobody now." The parents also mentioned that Barbara had no hobbies, no special interests of any kind.

Contacts with Parents: Summer 1963-Summer 1964

During the second and third contacts in the home, the especially close relationship between Barbara and her mother continued to be observed. The mother appeared more hopeful about Barbara's future by the second contact. She indicated that she was "not worried about her future . . . she'll go on to high school." By the third visit, the parents expressed pride in Barbara and confidence in her judgments. They gave Barbara the responsibility for entertaining the staff visitor. During the last contact the mother remarked about the program that "I think it done a lot of good . . . it will help when she gets a regular job." The parents also mentioned that Barbara now has two friends, one a 15-year-old high school girl, the other a younger girl attending grammar school. They also reported that Barbara now plays the tambourine regularly and "has a lot of birds" which she takes care of. It was also learned during the last contact that Barbara's older sister had given birth to another child five months previously.

Summary Interpretations

In considering Barbara's background at the time of her entrance into the program, two basic dimensions of her life appeared to be in operation. One aspect seems related to a sense of low self-esteem deriving essentially from the school situation, particularly during her attendance in regular classes. School reports described an easily frightened, shy youngster who needed constant encouragement. Her isolation from peer contacts during this period perhaps represents an extension of her fearfulness and lack of confidence in herself.

The second factor appears related to her sister giving birth to a child out of wedlock shortly before the beginning of the program. This appears to have aroused many conflicted feelings of a religious nature in Barbara, but also perhaps a threat to Barbara's close relationship to her mother, i.e., the young infant was perceived as a sibling who now competed for attention.

These two factors may have at least partially accounted for Barbara's behavior seen in the intake and subsequent interviews during the early part of the program. The extremely passive, almost vegetating, unenthusiastic, slow moving, and poorly groomed young lady seen initially suggests an individual quite immobilized by emotional turmoil.

These dimensions appeared to be displayed in the work situation, especially in her fluctuation in productivity, which was accompanied by her periods of rumination and "staring into space," and her readiness to anger with peers. The observations that these kinds of behavior frequently followed a call home substantiates the relatedness to events in the home situation.

It is of interest that both in the work situation and in the counseling sessions, Barbara initially developed a close, exclusive, and possessive relationship with the female staff person and became quite threatened when she saw other female clients being given attention by the same staff personnel. Whether Barbara's behavior with the female staff person provided a substitute gratification for her perceived possible loss of her mother's attention is not altogether clear, but it is significant that the need for such contact diminished as the program progressed. Accompanying this diminishment, Barbara began to exhibit a tremendous amount of movement in virtually all areas of work and in her relationship with peers. Notable regarding the latter is her increasing ability to work cooperatively with peers, especially female workers. She also gave evidence of the ability to give emotionally, to be helpful. This pattern eventually became realized in her leadership role and in being perceived by co-workers as a work model.

Her relationship to work supervisors also shifted from a worker who interpreted foreman work pressure as personal criticism to a worker who functioned at work optimally. The very specialized, highly supportive supervisory relationship was no longer required. By the end of the program Barbara worked autonomously, with a sense of self-initiated adequacy.

The evidence of an increasing sense of competence is well reflected in the counseling contacts, first of all in her lessened need for such contact; in her movement from unrealistic vocational goals to more reality oriented ones which are based more on achieved performance rather than on fantasy. Her changing aspirations appear to reflect the shift from her earlier preoccupation with babies (designer for baby clothes) to future directions that seem more clear of and less bound by highly charged emotions. Finally, confirmation of Barbara's increased ability to function over wider areas of her life is shown in her maximal performance in school and in establishing friendships with peers outside of the school and work situations.

Barbara's ability to maximally utilize the services of the program appear related to her anxieties which did not appear to be deeply imbedded aspects of her personality. The warm, giving family relationship appears to have provided a basic sense of security and encouragement. It would seem that the relationship between Barbara and the staff provided the basis for Barbara to release herself sufficiently from her emotional immobilization to turn her energies towards the work situation. Having achieved in productivity, the related ego enhancement is seen as giving force to a sense of momentum forward, to look more hopefully at her vocational future.

Barbara's general pattern of behavior was quite characteristic of the high employability white subjects. She was highly competent across most areas. She began the program as a pessimistic, relatively self deprecating individual. By the end of the program, her self-reports were more optimistic, though aspiration scores were still below the median.

In July, 1967, we were unable to locate Barbara or her family for a follow-up interview. They had apparently moved, leaving no forwarding address or phone number. Thus, despite our strong confidence in Barbara's employability, we were unable to confirm our predictions directly. It might be noted that no subject contacted in the follow-up whose employability score came within even ten points of Barbara's 119 had been unsuccessful. We thus deem it very likely that she is currently making a successful adjustment.

Dick

Dick, whose research code number was 106, was a member of the old experimental group. His workshop production, though increasing greatly over the course of the program (.39 to .60), remained below the group median for all the diagnostic assessment sessions. His diagnostic ratings were among the poorest in the shop. His Year III employability index of 76.58 reflected these low scores. This white male was thus judged a member of the low employability group.

General Background

Dick is a retarded boy who was 14 when he was referred to the program in 1962 from the H________School Educable Mentally Handicapped Division. At the time of referral the school reported that he was doing fair academic work. Achievement scores showed that Dick was functioning slightly above the third grade expectancy for his mental level. A Stanford-Binet given by the school at the time of his entrance into the program gave him an IQ of 61. Before Dick's enrollment in ungraded classes, he attended regular classes in parochial schools until he was 11. At this point the school authorities recommended that Dick attend ungraded classes in the public schools due to his extreme difficulty in maintaining the academic work.

Dick is a well developed youngster, the youngest of three children. There is a brother who is a year older and a sister three years Dick's senior. Although his brother and sister both attend regular classes in school, a report from the school counselor indicates that Dick's older brother presents many emotional difficulties in the school situation.

A year previous to Dick's entrance into the program, the father died of a coronary attack while being treated for tuberculosis at the Municipal Sanitarium. A native Chicagoan, he was married for 20 years to the mother who came to Chicago from Mississippi. Both are high school graduates. The father worked for 20 years for the same employer as an oculist's assistant. The family has lived in the same section of the city for 17 years (north side).

A medical report and mother's information state that Dick had several episodes of meningitis before he was six months old. His slower development is reflected in his beginning walking at two years and talking at approximately four years. Dick frequently exhibits a rather peculiar head "rolling and bobbing" behavior when he walks. According to his mother, he has been the subject of much ridicule by peers because of it.

Dick's mother responded very favorably to the program when initial contact was made with her regarding Dick's selection. She felt that the program would be "wonderful training and give Dick a chance to learn responsibility." Dick also appeared quite excited about the program, although he had already been working in a TV repair shop as an errand boy.

Work Behavior: Summer 1962-Spring 1963

Production

Dick initially worked at low-average and average rates (compared with his peers) on sedentary tasks such as packaging and assembly work. However, on stock and errand tasks, his performance was much more rapid and remained at a consistently high level. As the program progressed his productivity tended to deteriorate on sedentary tasks, although he would occasionally show flashes of fairly high productivity.

Quality of Work

In general Dick did acceptable work except when quality on more complex stock work demanded greater judgment.

Relationship to Supervision

Dick began the program with a rather conforming, anxious attitude towards supervisors. He appeared to want to please, but most of the interaction was non-verbal in character. He followed instructions well. As he began to gain in comfort, Dick became much more boisterous. He would bang on the table, make various animal sounds, tell jokes, and sign comical songs. When controls were imposed, he would conform momentarily, this often being accompanied by hurt feelings, and then return to his original distractible behavior. By the spring of 1963, a fairly consistent pattern was noted in that Dick appeared to respond to the controls of the male foreman more readily than the female staff. He also sought out praise exclusively from the male foreman and began coming to work well ahead of the others and leaving long after the other clients had left the work situation in order to socialize with the foreman.

This relationship with the male foreman, in association with Dick's being assigned to stock and packing assignments, impressed the staff as providing the climate for his demonstration of optimum work behavior and performance. Praise for good work on these tasks appeared to have an excitatory effect on Dick, on occasion so much so that he would tend to lose motor control and collide with physical objects and other workers. On the whole, however, he was able to better mobilize his energies around the work, with praise on these tasks. What appeared more fundamental than the praise, on the other hand, was the greater close, one-to-one relationship afforded him on these tasks as contrasted to his working on more group sedentary table assignments where one tends to receive less exclusive interaction with the foreman.

For the last two months during the spring of 1963, Dick was returned to sedentary tasks as one of a group working on the same assignment. Where he worked individually on the same job as others, he displayed unusually high productivity and considerable receptivity to foreman suggestions around improving his work methods. On one job he improved his productivity from 370/hour to 562/hour. However, foreman contacts were close. In contrast, when Dick was assigned to a group assignment in which he was a member of a team, and with fewer foreman contacts, his productivity deteriorated considerably, showing wide fluctuation and sporadic work efforts.

Relationship with Co-Workers

Initially Dick was fairly isolated, but attempted appropriate contacts with male peers which were rejected. Subsequently he became more aggressive (such as hitting and squeezing) towards male peers and sought out those who were more adequate and less conforming. His greater success with these youngsters appeared to hinge largely on his frequently treating them to pop and candy. Because of Dick's obvious display of buying friendship, he was frequently taken advantage of by the more adequate boys. Dick frequently provoked others by his throwing various objects at co-workers, loud singing, or accidental collision. He occasionally engaged in kicking and hitting episodes with girls which terminated in the girls usually besting him in the interaction.

Dick displayed a considerable amount of hypersensitivity to social stimuli during work. He would be easily distracted by co-workers, especially by more adequate males and he was the butt of many derogatory remarks and teasing. However, when he was functioning well on stock and packing assignments, co-worker conflict diminished markedly.

General Observations

Dick's work attendance and promptness was virtually perfect. He appeared to have a deep investment in participating in the program, especially in regard to his relationships to staff and to a lesser degree in his relationships with peers.

Dick's appearance showed a marked improvement during this period. During the first weeks his clothing was described by foreman as "tending to be sloppy, shirt always hanging out." Later reports describe a relatively "neat boy with hair well groomed . . . as exhibiting a certain pride in his clothing . . ."

Work Behavior: Summer 1963-Summer 1964

Production

During this period Dick continued to demonstrate essentially the same level of productivity seen during the first part of the program. However, there was a noticeable diminishing of the wide fluctuations seen earlier on sedentary packaging and assembly assignments. Dick also began exploring various work methods, a contrast to his previously more stereotyped approach to various tasks.

Quality

Dick's level of achievement around quality control remained mostly acceptable.

Relationship to Supervision

As Dick's work behavior became less boisterous and distractible and foreman controls were less needed, he began to exhibit increasing seriousness around the work itself. More work pressure was applied. He responded well to supportive foreman pressure, but displayed considerably more difficulty in relating to job pressures which required his responding to more complex relationships inherent in the task as well as with co-workers.

Although Dick still needed the foreman's interest, praise, and protection in order to function relatively well in the work situation, he appeared less dependent on the foreman for exclusiveness in the relationship. By the end of the program Dick impressed the staff as being able to function more autonomously in the work situation.

Relations with Co-Workers

Probably the most notable change in Dick was evidenced in the diminishing of aggressive physical contacts with co-workers during this period. His aggressiveness appeared to be expressed in more verbal contacts. Rather than attempting to "out-hit" co-workers, Dick began to challenge them around his having seen a better movie--"Yea, but did you see 'Battle Wagon'--that was a lot better picture than ---."

During this period, Dick also seemed to enjoy less teasing by others. Conflicts with co-workers were also addressed more frequently around the nature of the work activity rather than in non-work related activities. Greater focus on the work was also manifested in his increasing competitiveness with co-workers working on the same task, especially with those who were performing more evenly with him. His social judgment in this respect demonstrated a more positive change in his social awareness since Dick characteristically selected as his competitors those who were clearly superior to him in motor skills, especially in break-time recreational activities.

General Observations

Dick continued to show positive investment in the program. It was noted that Dick's "head rolling" behavior had virtually disappeared by the end of the program. This observation is more generally substantiated by Dick's increasing ability to restrict his physical aggressiveness and motor expansiveness as the program progressed.

Dick also clearly demonstrated his need for a close relationship with an adult male figure. When this need was satisfied, and as it was increasingly satisfied, he demonstrated the capacity to mobilize his work energies more and to work more independently of the exclusive relationship.

Counseling Activities: June 1962-Spring 1963

Counseling activities during this period showed a highly restless, non-verbal young man who typically responded with only a "yes" or "no." An early counseling notation states: "His attention span is short and he is highly distractible. Very frequently, when he pauses, he gives the impression of withdrawing from the situation at hand . . . losing track of what was being said."

These early contacts also revealed a youngster who was sensitive to being mistreated by peers, showed concern with "good" and "bad" boys, and his frequency of fights with the latter. On the other hand, his overt responses to the counselor's questions which pertained to his feelings of adequacy were uniformly positive. For instance, he felt that he got along well in a group and that he handled himself well in sports. These responses, however, were seen as defensive ones, disguising massive feelings of being hurt, attacked, subject to ridicule. Therefore, counselor questioning touching upon these areas appeared related to Dick's verbal withholding and motorically disturbed behavior in the counseling situation. Talking about himself was painful.

Several months after the program had begun, however, the counselor noted: "So far, he had been primarily responding to my questions and then staring into space . . . Then he mentioned his job. On this subject he was able to express himself better. He seemed more comfortable and offered information for the first time." A little later in the same contact, while the counselor and Dick were waiting for his mother to complete her own interview with another counselor, the counselor asked Dick whether he would like to help her stuff envelopes. According to the counselor, he did "an amazingly good job. His movements are so gross and uncoordinated that I thought he might have trouble; but he worked hard and fast and did a neat job. We talked about what we were doing--that they did this kind of work in offices . . . He seemed very pleased and very relaxed as he tried to stuff quicker than I could address and he managed to get ahead." As a result of this interaction the counselor noted that "active participation seems to be the key to making Dick comfortable" and mentioned that they were talking enthusiastically about doing other things when the mother entered the room.

Although Dick's increasing comfort and verbalization in the interview progressed, he became deeply involved in hostile interactions in the work situation. Related to this was a display of constant eating, frequently bordering on devouring of foods. The counselor reported the ongoing situation as follows:

> The only way he can avoid being totally isolated is to accept this view (of his social inadequacy) and allow himself to be picked on . . . in fact, even encouraging others to pick on him . . . so that he may receive at least some attention in the only way he knows. However, by incorporating the others' view of him (i.e., as an inadequate, dumb, clumsy, and not quite right individual . . . comments I have heard others

make about him and to him), he may gain limited acceptance, but loses any feeling of self-worth."

It became the counselor's goal to attempt to help Dick become more aware of handling these social interactions in the work situation in ways that were more self-enhancing to Dick. But the counselor's efforts to move in this direction were repelled by Dick with much of the earlier constricted, non-verbal behavior being exhibited again. After one such interview, Dick "bounded downstairs, ran into Mike, punched him in the stomach, and called him a baby."

Counseling Activities: Summer 1963-Summer 1964

In the yearly diagnostic interviews, which were conducted by interviewers rather than his regular counselor, Dick continued to exhibit some of the anxieties seen in the earlier contacts, but on the whole he appeared more comfortable and elaborated his feelings more. Although Dick maintained a positive image facade of himself, these later interviews displayed changing interests and aspirations.

Whereas in the first contact Dick related that he played tag, hide-and-seek, and baseball, he now reports that he plays baseball, goes swimming, plays the organ, and listens to the radio. However, he continues to participate in these activities with friends who are three to four years younger than he. Whereas earlier he had hoped to go to high school or at least to finish elementary school, he related during the last summer of the program that he "wanted to finish high school and then go to college." This was shortly after he was informed that he would be graduated to high school beginning the following fall. On the other hand, his vocational aspirations appeared to become increasingly diffuse as he approached the completion of the program. In the first contacts Dick indicated that he would like to be a paper boy, fireman, or policeman, but by the end of the program he related that he didn't know.

Post-program contacts were continued with Dick, focusing on his difficulties in maintaining remedial high school courses and the question of his vocational future. This shift in his life situation, accompanied by the likely possibility that Dick would not remain in school beyond the current school year, appears to be a significant factor in shaping a more sober, work-focused young man than previously seen during the course of the program. Anxiety is still very much evident, but much better directed, more allowing a comfortable, flowing communication and utilization of the counseling process to enhance his present level of functioning. The need for nurturing appears to have diminished considerably; and the ego seems to be on more solid ground, enabling more sharpened discussion around mutually understood vocational planning.

Contacts with Mother: Summer 1962-Spring 1963

Contacts with the mother were related to the annual home visits by staff for diagnostic purposes, individual counseling sessions with the mother, and parent group counseling meetings.

Initial contact with Mrs. D____ revealed a mother who appeared deeply appreciative of Dick's inclusion in the program, but emotionally involved around the loss of her husband the previous year and a hysterectomy operation which she had recently undergone. In this first contact she dwelled heavily on her operation and related current symptoms, such as shortness of breath and dizziness. When asked about her vocational aspirations for Dick, she responded that "I don't think much about it. I don't know if he'll have to be under my wing . . . I hope not. There is nothing he has shown any inclination for." When asked what she thought Dick's hopes were, she replied that "he likes fire trucks . . . to see where they are going."

In a later home visit contact, shortly after Dick began the program, Mrs. D____ went into great detail about Dick's birth injury. She described her apartment, which was "cluttered and shabby," according to the counselor, as a "dump". "That's all this place is, a dump." The mother also described Dick's gait as "ape-like". When Dick entered the room, she described his appearance as sloppy and related how difficult it was to keep him clean and how rapidly Dick wears out his shoes.

Subsequent individual counseling contacts also showed a woman deeply immersed in feelings of loss related to her husband and recent operation. For approximately the first year, counseling contacts were focused on providing support to the mother and consideration of her seeking psychiatric aid, returning to work, or simply holding on for the time being. Only limited energies of the mother were available to Dick so that vocational discussion around Dick was highly restricted. However, she did point out several months after Dick began the program that he has "matured more, seems more settled" and that Dick was extremely pleased with the work experience. She also remarked that Dick gave her his entire pay check, since the family was living on Social Security Benefits and another small source of income.

Mrs. D____ expressed the same concern as Dick towards peer relations--clearly distinguishing the "nice boys" and the "bullies" who mistreat Dick. Likewise, at parent group meetings, Mrs. D____ stressed Dick's generosity and goodness and how well-liked he was because he never caused trouble. This appeared to cause some annoyance among other parents of clients in the program since many of their youngsters apparently have made remarks to their parents concerning Dick's physical aggressiveness.

Contacts with Mother: Summer 1963-Summer 1964

During the early part of this period Mrs. D____ acquired part-time work in an office and apparently resolved some of her earlier conflicts. Contacts were now more directly around Dick's vocational and educational progress and communication between Dick, the mother, and the staff was greatly facilitated.

The second home visit showed a much more hopeful mother who observed that Dick is "maturing and getting more sensible . . . he has a good head on him. A lot of people say he may make more money than the other two (brother and sister)." She expressed the feeling that the program had helped Dick mature and didn't seem to feel that he will have any difficulties with employment, although she realized that he will never be "quite right".

The third home visit gave information that the family had moved to a larger, cleaner apartment and the counselor reported that it was "better kept up". During this contact the mother related that Dick has "grown up quite a bit . . . work has improved him . . . and the teacher wrote that he's improved greatly." She also reported that his peer relations had improved considerably. "He's matured in every way. He plays with older kids now . . . around 14, instead of the small ones . . . I haven't had money problems this year . . . and he can go on his own more." The mother also confirmed Dick's new interest in baseball and appeared genuinely proud of a tool box Dick had made at school. The counselor observed that it was very neatly made, a marked contrast to a jewelry box Dick showed two years ago.

The mother also continued to report Dick's gratification with the program. She said that "there's no trouble getting Dick up for work. It has helped his mind to figure things out, has helped him mature . . . developed his responsibility. He is more grown up because he goes to work." The counselor also noted that Mrs. D____ was very calm and pleasant and seemed more in control of herself this year. "There is less of an hysterical concern about herself most apparent the first year and to some extent last year. She has kept the same job for the year . . . has a chance for a better job with the same company."

The latest contacts with Mrs. D____ centered around Dick's difficulty with his school work, his likely termination from high school after the current year, and in working out a suitable vocational plan. In this planning interaction between the school counselor, Mrs. D____, Dick, and the staff, the mother demonstrated the ability to integrate and utilize the various helping resources available to her in maximizing assistance to her son.

Testing

As a part of the diagnostic procedure, psychological testing was conducted annually, in 1962, 1963, and 1964.

1962

Previous school testing on the Stanford-Binet reported that Dick had an IQ of 63 in 1959 and 61 in 1962. Our testing with the WISC gave Dick a full scale IQ of 54. Although he was basically cooperative, his verbal responses were minimal and he spent much of his time looking out the window. Some evidence of brain damage was apparent in the Bender-Gestalt. His performance on the WISC suggested an inability to integrate and his manual dexterity, especially in using both hands on the Purdue, lacked coordination.

Dick drew extremely primitive people with a great deal of head detail, but little or no differentiation of other parts of the body, especially the extremities. His people appear to be ineffective and helpless and lacked sex differentiation. An interpretation was that Dick tended to feel that he has little control over his own body.

The psychologist summarized the testing as follows: "He tries to protect himself from ridicule and failure by not taking any chances, suppressing his feelings to the extent that he barely responds. While this protects him from unpleasant experiences, it also cuts off his opportunity to grow and utilize his abilities . . . he is fighting for acceptance . . . His major barrier to employment is his lack of social judgment."

1963

Dick's full scale IQ on the WISC was 75, a gain of 21 points over his previous testing. Both his verbal and performance scores improved, but especially the latter. The psychologist observed that "apparently this increase is due to his being able to attend to his tasks and work faster this year . . . and perhaps also because of his improved self-assurance when it comes to performance skills. His manual dexterity improved and his performance on the Bender Gestalt also showed improvement, but perceptual difficulties were still evident. Dick's drawings were still immature, but much more mature than the previous year. He also showed evidence of a more favorable body image."

Dick's behavior in the testing situation also showed considerable contrast to the previous year. He came cheerfully, was eager to please, and free of the odd mannerisms and uncontrolled motor movements. The psychologist raised some question as to what extent

Dick's emotional difficulties are related to his motor coordination, noting that his coordination had improved markedly both in the testing and work situations in the past year. The testing was summarized as follows: "The big improvement Dick has made over last year--in both intellectual and emotional areas--suggests that more is possible."

1964

On the WISC Dick achieved an IQ of 74, maintaining the gain he made the previous year. Generally he showed gains over the last year with freer responses and drawings which showed great improvement. But his view of himself as the "village idiot" also revealed itself in the testing situation.

Summary Interpretations

Dick is a husky, well developed young man who entered the program at the age of 14. At the time of his entry the school reported an IQ of 61 and indicated he was achieving slightly above his grade expectancy. There is a history of meningitis. Intake information showed a clumsiness in gait and a tendency to "roll" or "bob" his head, a characteristic noted very early in Dick's life. The mother revealed that Dick has often collided with plate glass windows.

Several events took place shortly before Dick's entry into the program. His father died about a year before, but he had been institutionalized for a number of years previously for a tubercular condition. This would indicate Dick's loss of a father figure over a number of years, approximately since he was 10. Shortly after the father's death, the mother had a hysterectomy which apparently created many emotional conflicts within her, causing a considerable amount of self-preoccupation and accompanying inability to turn her concerns and support towards Dick.

The first two events clearly signify severe emotional losses, especially to the mother. Their impact on Dick, directly or secondarily, were not clear at the time he entered the program.

Changes in the Work Situation

Several changes were noted in Dick in the work situation. Although his overall productivity showed little improvement, he achieved greater stability (i.e., far less fluctuation in production). It became quite evident that Dick's ability to work hinged largely on his relationship with the male foreman. He functioned best when he was provided close, intensive contacts with his male work supervisor. This was especially made possible when he worked at stock and gross packing operations where more contact with the foreman was necessary. However, his maximal performance in this area is perhaps also accounted for by his need to engage in gross muscular work activities. When his needs for exclusive male contact and gross muscle tasks were not gratified, however, boisterous, loud, aggressive behavior tended to be displayed. This behavior is seen in part as a call for the needed contact.

As the need for male contact was satisfied in the work situation, Dick showed a gradually increasing ability to work more independently of supervision. Also, since he was able to contain his behavior more, the need for foreman controls diminished. One of the most striking modifications in Dick's behavior was the diminishment of his physical aggressiveness. The "head rolling" also virtually disappeared by the end of the program. The hitting and pushing behavior seen earlier appeared to be replaced by challenges on a more verbal level.

This combination of greater self-adequacy and diminishing physical aggressiveness also appeared related to greater acceptance by co-workers. He became less subject to teasing and began competing around the work as opposed to around physical competitiveness unrelated to the work. However, there continued to be co-worker conflicts, and these occurred when the work became more complex. But it is notable that the conflicts centered around the work activity rather than in episodes which interfered with the work. Dick's acquisition of a greater sense of adequacy and autonomy also showed in the diminishment of his need to buy friendship, to stuff himself with food, and in his marked improvement in self-grooming.

Changes in Counseling

Due to Dick's sensitivity and guardedness, much of the counseling work was directed towards helping him feel more comfortable so that he could begin verbalizing and expressing feeling more articulately. It was only toward the end of the program and during post-program contacts that Dick began to display the capacity to discuss issues of vocational concern. Even then, it was fairly clear that the counseling process was greatly helped by Dick's awareness and anticipation of a major shift in his life status. The counseling contacts revealed a massively deflated self-image. Counselor responses directed to him about himself were characteristically met with denial, statements to the effect that "everything was fine". Verbal reticence became marked.

On the other hand, when some form of activity in the counseling interaction drew attention away from himself, he became considerably more spontaneous and verbal. Although Dick's achieving greater communication on the post-program contacts could be attributed to his having gained greater comfort in the interview situation over the past two years, the content of the interaction around "getting a job" would seem to be a much less threatening issue since it relates more to "it" than to "me".

It is noteworthy that in the counseling contacts Dick showed a greater capacity to use the relationship. Although anxiety is still quite evident, it has become more focused and directed. Vocationally relevant material can now be more readily discussed.

Changes in Contacts with Mother

Changes in the mother's attitude and perception of Dick appear to show steadily increasing positive feelings during the progress of the program. How much of this is related to her own capacity to recover from her sense of personal loss surrounding the time of Dick's entrance into the program is difficult to determine. But it is clear that Mrs. D____ always valued highly Dick's participation in the program.

The mother's initial observation during the intake that she "didn't know" what Dick's vocation would be and her remark that "he likes to watch the fire trucks go by" when asked what she felt Dick's vocational aspirations were stand in marked contrast to later expressions. During the last summer she made such observations as: "He's matured in every way . . . the teacher wrote that he improved greatly . . . he plays with older boys now . . . the program helped his mind figure things out . . ."

Mrs. D____ herself appears to have made gains. Her decision to return to work may have also had some bearing on Dick's progress. When she was unemployed, all of Dick's paycheck went to the mother for meeting family living expenses. After she began working, Dick gave only a part of his earnings to the mother. A contact during the last summer of the program revealed that she was happy with her job and is anticipating a promotion.

Although the early work with the mother was addressed to providing emotional support not directly related to Dick's vocational questions, it is felt that this activity established a relationship which facilitated later communication with staff around more vocationally relevant questions concerning Dick. She made ready and appropriate use of the counseling activities in behalf of her son towards the end of the program. Her support of Dick became increasingly evident and well oriented with regard to Dick's strengths and limitations against the realities of the labor market.

By the end of the program much greater communication between the mother and Dick appears to have been achieved.

Changes in the Testing Situation

Changes in Dick's testing behavior and performance seem to substantiate the positive changes observed in the other areas already discussed, although they also reveal that Dick still retained a basically deflated self-image. It is notable that when Dick showed his striking increase in IQ the second summer, his general test behavior was in marked contrast to the previous year. Much more confidence and buoyancy were noted along with greater mobilization of energy. Awkward motor expressions were also greatly minimized.

The changes observed in both Dick and his mother during the years of the program were quite dramatic. The fact that, despite these changes, he remained in the low employability group as of Year III testifies to the concurrent changes undergone by the other youngsters during these years.

In Year III, Dick's self-concept pattern was the Depressed Interview. That is, he was at or above the median on all measures except the Interview. Here he continued to express relatively self-deprecating judgments.

Unfortunately, we cannot report on Dick's current vocational adjustment. In July 1967, attempts to reach the D____ family failed. As with many of the others, they had moved and left no forwarding address. We can only speculate about his present adjustment. Considering the subsequent successes of two other white low employability subjects who displayed growth during the program, Stuart (304) and Art (312), there may be cause for optimism.

JoAnn

JoAnn, a Negro girl whose research code number was 012, was a member of the old control group. She was thus seen by staff only during the annual diagnostic assessment period. This fourth case study is the only one not written by Daniel Kuzuhara. It is based on anecdotal information, interview protocols and psychometric data available in East Lansing at the time of the completion of the final report.

Background Information

JoAnn was recommended for special ungraded class placement in November, 1959 because of her slow mental growth, her inability to master the curriculum skills and her advanced age (12 years old in 4th grade). This placement made JoAnn eligible for referral to the Vocational Development Center workshop program. Since moving to Chicago from Tennessee at the age of five, JoAnn and her family have remained in Chicago. While living in Chicago she attended seven different schools and repeated two grades before she was referred for a psychological assessment. Her lack of success academically had been overlooked somewhat because she was always well-behaved and attentive in the classroom--no real problem to the teacher. Her placement in EMH class followed an examination that revealed an IQ score of 70. While her academic achievement in arithmetic was then considered appropriate for her mental age of 8 years-10 months, reading and spelling attainments were slightly more than a year below grade expectancy. At the time that JoAnn began as a member of the old control group in the workshop program, her achievement attainments were at the fourth grade level for both arithmetic and reading. She was then fourteen years old.

Well mannered,attentive and docile during the initial intake interview in 1962, JoAnn responded quite slowly to directions and questions. She had considerable difficulty finding the words to use. At times the words were indistinct. Her physical characteristics were that of a short, slender Negro girl with protruding cheekbones and a somewhat disheveled appearance. She wore thick glasses which she had obtained just two weeks prior to her psychological examination.

While there have been several moves, JoAnn's family appears to be quite stable. Each of the four moves in Chicago has been to a larger and more expensive apartment. The parents have been married for 26 years (as of 1967). The formal education of the mother and father is limited, seven and five years respectively. But both are employed--the mother only in the past two years. The father has changed jobs quite often; he is currently a hauler. JoAnn is the second of ten siblings ranging from 25 to 5 years of age. Because of the wide age span of children, JoAnn has been a great help around the house and somewhat like a second mother to the younger children.

Summer 1962

At the age of 14 JoAnn enrolled in the workshop program as a member of the control group. Because of her small size and lack of verbal ability she felt and acted inadequate when interacting with peers. The negative feelings about herself were abundant. As a result she behaved in a shy, deferent manner around the supervisors and her co-workers. She had no special friends at school or the workshop, but had three close girlfriends in her neighborhood. JoAnn's shyness was not as apparent during play with her friends. Speech was more fluent and motions more active. They jumped rope, played games, went for walks and to movies together. The parents approved of her choice of friends who seemed to be "nice, not rough". The mother was stable and supportive of JoAnn and did not perceive her as mentally retarded. The parents assumed that her academic difficulty was due to "other reasons", such as need for glasses, lost books, etc.

The family lived in a 4 flight walk-up apartment for which they paid 75 dollars a month for rent. The house was clean but quite shabby. The parents reported that JoAnn occasionally washes, irons, cooks, cleans, goes to the store and babysits for the younger children. She also babysits for an aunt sometimes. It is apparent why her mother reported that she was a good helper around the house. During the home visit, the mother told JoAnn to do several tasks. JoAnn complied with her mother's requests, but seemed to do so in a slow moving and lazy manner. JoAnn enjoys playing with the younger children very much. Leisure time activities include extra reading, watching television, drawing, painting, embroidering and sewing.

At this point, JoAnn had set unrealistic goals for herself. She wanted to be a teacher, a nurse or a secretary. She preferred regular classes to ungraded ones, and has little doubt of her ability to do regular high school work--or even college. She thought that she might return to the regular classroom if she worked hard. She could do most tasks requiring manual dexterity, but not those involving much abstracting.

JoAnn did not see any similarity between the workshop and school. Often times bored in the special classes, JoAnn thought the workshop appealed to her because it was interesting, enjoyable and different. The supervisors experienced her as a pleasant, friendly girl who accepted definitions and explanations without defensiveness. A willing worker, she incorporated the instructions quickly and easily. This contrasted with reports of slowness of response that were observed at home and in school. As reflected by both verbal reports and production rates, JoAnn has adequate manual dexterity. Examples of her embroidery work were also of "average" quality.

JoAnn had scores above the median on all of the tests of the "competence cluster" with the exception of ratings. On the Purdue she used both hands nicely but she tried too hard. This anxiety slowed her down somewhat. The WISC Performance score was 5 points above the Verbal score (P-75, V-70, Total 70). When she made mistakes they did not go unnoticed. She either acknowledged the mistake verbally or corrected it. Her average production rates the first year was .44, the same as the group median. These scores are computed on the basis of factory worker's average on similar tasks set at 1.00. As we see JoAnn was quite a bit below the average factory worker's rate at this time.

While interviews indicated that JoAnn had a somewhat negative self-concept, the scale (118), drawings (40), and level of aspiration average ratio (1.09) did not bear this out. Verbal reports were that her level of aspiration was usually below her ability. But the level of aspiration average of 1.09 presents a moderately optimistic picture. As she made her drawings she spoke very little, but manifested much body and facial expression. In many of her pictures we can see her sensitivity to interpersonal relationships and to the environment. Pictures were of people doing something--playing a game, going on a walk, etc.

Since JoAnn was quite shy we would not expect her to be as popular with her peers as some of the more outgoing members of the group. She was chosen by only three fellow workers on the sociometric questionnaire--well below the median.

Summer 1963

Many of the characteristics reported in the first year of the program could still be found, while some changes had also been noted. JoAnn was easy going and well behaved in the workshop. Whenever she was wrong she apologized profusely. She was still attracted to the same "type" of friends, i.e., "ones that don't stay out too late and are not rough." A boyfriend had been taking her out for afternoon dates. Two logical reasons for her popularity were (1) she worried about being popular and felt that if she ever got angry she wouldn't be popular and (2) her physical self-concept was somewhat improved over the last year. Quite realistically, she felt that her appearance was "OK". She knew her assets and liabilities. She stopped wearing her thick glasses even though this caused her to have a continually strained look on her face. She has developed a nice figure and a friendly smile.

The family moved to a larger apartment that was on the second floor of a two-flat apartment building during 1963. Their rent was now $120/month.

JoAnn did not think of herself as mentally retarded. She even denied that she was in an ungraded special class. She still wanted to be a nurse, teacher or office worker, but admitted that the latter occupation was more realistic because she could type.

In the workshop JoAnn displayed fairly good coordination, acceptable behavior and excellent work habits. She was quite friendly to her peers and the supervisors. Quick to understand directions, JoAnn was not defensive about unclear instructions. It did not disturb her to ask for clarification or more specific directions. She liked good strong discipline. The more structure that was available, the more content she seemed to be. She tried hard at each task during the individual testing and was quite aware of her errors. The general impression at this time was that she would probably be a very adequate worker. While her production score of .56 was below the industrial average of 1.00, she produced more than the median score of her group.

This year she had scores above the median on all tests in the "competence group". Her Purdue score was lower than might have been expected because she tried so hard. The beginning went smoothly but then her motions became jerky. She was more anxious during the individual testing than when doing the tasks in the workshop.

JoAnn also scored above the median on the self-concept measures. Her scale score and drawings remained about the same as the first year but her interview score increased markedly from 9 to 18 out of a possible 25 points. We also notice a rise in her sociometric score from 3 in Year I to 21 in Year II. Level of aspiration ratio went from an average indicating a moderately optimistic pattern to one that was far more optimistic (1.09 to 1.28). She appeared to be quite well adjusted, realistic and an adequate worker.

Summer 1964

Little noticable change had occurred in JoAnn since past summer. While she seemed somewhat more relaxed, we still find a quiet unassuming, pleasant girl. Because she no longer wore glasses (which she needed), she had a tendency to squint when nervous. JoAnn was popular in the workshop and also at home. She was dating two different boys and was well respected by her parents. Not only did she have a measure of self-confidence, but she conducted herself in a more mature manner than many others in the workshop.

The family lived in the same apartment that they had lived in last year. They had a lot of well-used furniture and there was apparently a lot of understanding and good natured kidding in the home. The parents knew all of JoAnn's friends and their families. Her selection of friends was the same as it had been--all were well mannered.

JoAnn enrolled in regular classes at school and was receiving average and below average grades. Her educational goals still included college as a possibility. She wanted to be a nurse. The only similarity that she saw between the workshop and school is that "some of the kids are the same".

While her WISC IQ score had increased two points over the past three years the median for the group had also changed. Her score of 72 now fell slightly below the median score even though it was above the median in Year I. For other tests of the competence cluster, JoAnn's scores fell in the high group. The first year, we noted that her Performance Scale was 5 points higher than the Verbal Scale. They were now equal. The highest subscale score in Year I was in Object Assembly. The same holds true for Year III. Coding subscale also peaks above the other scores now. Production scores had risen to .87--a figure very close to a factory worker's average. She was producing at a rate of 1.10 for 4 of the 5 days of the diagnostic assessment. Her production rate definitely indicated that she could be a very capable worker with tasks of a similar nature to those used in the workshop.

Self-concept scores were consistent with the scores that were observed the past summer. Her Scale score had risen slightly while interviews, drawings and level of aspiration index had all decreased slightly. Level of aspiration index again is a value that is quite realistic (1.07). She does not aspire to do much more than she knows she can. Her overall pattern was Depressed Interview, with other scores generally at or above the median.

Drawings were of a little girl who was angry. She then explained that the girl was angry because the girl thought the friends she was playing ball with had cheated. Other pictures indicated once again her interest in interpersonal relationships within her environment. She drew a family going on a picnic.

Summary

Other than for the level of aspiration index, JoAnn's scores increased on all other measures from Year I to Year III of the program. JoAnn began with a fairly consistent high pattern of scores. Three years later her high patterns were repeated. The employability index criterion classified JoAnn as a highly employable individual. Comments about her friendliness, her manual dexterity, her willingness to work, etc. suggested that she should have little difficulty obtaining and holding a job. While she talked in terms of going to college, she also was quite realistic about her potential.

Follow-up interviews report that JoAnn attended W____ High School for about one and one-half years of a special two year class and quit. Immediately after leaving school, she acquired a placement through the Job Corps as a child care worker at a day school. She remained at this job until her older sister secured a job for her doing wiring work for a plating company.

In August, 1965 JoAnn had expressed her intention to return to regular high school classes. But these plans no longer exist. She is currently working full time at approximately $1.75 per hour. JoAnn was married in April, 1965 to a "half-foreman" at the factory. Her plans for the future center around him and their hopes for a family. At 19, JoAnn remains pretty much the same as we observed in the program--small, shy and hardworking. Our prediction of high employability for her has been amply confirmed.

Discussion of Case Studies

These studies require little additional comment, so well do they speak for themselves. In general, they appear to confirm that the statistical picture drawn in the previous chapters of this report are not wholly inaccurate as reflections of the individual lives of the participating adolescents. Mike is proto-typical of the white middle-class retardate whose parents have pampered and sheltered him. He is socially immature, generally childish, dependent and consistently self-deprecating. For Mike, the prognosis is poor.

Barbara is representative of the high employability white subjects. She is not middle-class. Her parents are working class and not well-educated. They are accepting of her and, unlike Mike's and Dick's parents, less sensitive to her retardation. Though she does quite well in the program from the very beginning, she maintains a High Self-Report, Low Aspiration self-concept pattern in Year III.

In Dick's case there is a possibility of organic involvement stemming from his bouts with meningitis as an infant. His clumsiness, head-bobbing and performance on the Bender generally confirmed the hypothesis of organicity. It is unclear whether his mother's rejecting attitude toward him in Year I was a function of her short-term reaction to personal losses, or a reaction of longer standing. Considering the family's middle-class standing, we would expect the latter to be the case. Yet, Dick showed as much growth as any subject in the program. His Year III low employability status merely testifies to the extent to which he was behind the other participants at the program's inception.

JoAnn is typical of many of the high employability Negro subjects. Competent from the beginning, she was not treated as an exceptional child by her parents and did not perceive herself as such. She was often unrealistic about the future, but was also flexible enough to adapt to new contingencies as they occurred. Married and employed, she is well on her way to being a successfully functioning member of society.

Would participation in the experimental treatment have made any difference in JoAnn's life? It is difficult to imagine how. Her eventual employability was apparent from the beginning. Did their experimental group status help Mike, Barbara and Dick? The statistical evidence consistently says no. Yet, reading the case studies, one is impressed by the many changes observed in them that appear clearly tied to aspects of the service program. Only additional studies will allow us to answer these questions of treatment and change unequivocally.

CHAPTER XIII

EPILOGUE

In July of 1967, when this final report was already well underway, we attempted a final follow-up of the subjects who had participated in the present study. We were fortunate in finding that the individual who had served as supervisor of the treatment workshop for the entire duration of the study was available to conduct this follow-up even though by this time he was no longer associated with the Chicago Jewish Vocational Service. Thus, in July of 1967, Mr. Daniel Kuzuhara, now of Northeastern Illinois State College, attempted to contact all of the 55 original subjects by telephone. This chapter reports the results of those telephone interviews.

We had two objectives in this final follow-up. First, we were concerned with establishing the predictive validity of the Employability Index. That is, we wished to examine the extent to which the assignment of subjects into high and low employability groups could be predictive of their success or failure at actually finding competitive employment. Second, we were concerned with finding out how our subjects had fared for themselves as they now completed the second decade of their lives.

As could have been expected, there were often great difficulties in reaching some of the subjects. Many, especially those from lower-class families, had never had a home telephone. Many had been extremely mobile geographically before their participation in the program and continued to be so, often leaving no forwarding address or telephone number. Many of the subjects in the attrition group had had no contact with us for as long as four years. Therefore, when we were able to contact fully two-thirds of our subjects by telephone during the month of July, we felt that we had been fortunate. A total of 33 of the original 55 subjects were reached for this follow-up interview. The distribution of these subjects by experimental group, race, and sex is summarized in Table 54 .

TABLE 54

DISTRIBUTION OF SUBJECTS CONTACTED IN FOLLOW-UP BY RACE, SEX AND EXPERIMENTAL TREATMENT

	Experimental	Control	Total
Negro Male	2	2	4
Negro Female	1	3	4
White Male	7	3	10
White Female	6	9	15
	16	17	33

Prediction of Employment Success

It will be recalled that 18 subjects had been rated highly employable while 14 were considered of low employability status. Of these, 13 high employability and 8 low employability subjects could be reached in the follow-up interview. It was only on the basis of this somewhat meager sample that the predictive validity of our diagnostic assessments of employability could be established.

It was decided to divide the follow-up subjects into two groups; a group which appeared to be making a successful vocational and personal adjustment and a group which appeared to be unsuccessful at making that adjustment. Successful adjustment was defined by the presence of any one of the following attributes: Presently holding a job which has either been held for a long time or appears stable, still attending special or regular classes in a public or private high school, recently graduated from a public or private high school and actively seeking employment or married and working as housewife (for females). 'Recent' graduation for the third criterion was defined as during the previous month, June, 1967. Unsuccessful adjustment would be defined as follows: No present employment, history of past employment of short durations with little employment stability, school dropout with little in the way of future plans, or school graduate with lack of success in finding a job or making concrete plans.

On the basis of that distinction between successful and unsuccessful adjustment, the 21 subjects reached who had been rated as either high or low in employability were assigned into either the successful or unsuccessful category.

Table 55 reports the two-by-two contingency table for the relationship between rated employability in our study and actual success or failure in the job or education market. It can be seen that predictions of success were almost perfect for the high employability group, while predictions of failure were less so for the low employability group. The value of X^2 for this two-by-two table is 4.85, which is significant at less than the .03 level. Hence, our employability criterion is validated.

TABLE 55

2 X 2 CONTINGENCY TABLE FOR RELATIONSHIP BETWEEN RATED EMPLOYABILITY AND LATER SUCCESSFUL OR UNSUCCESSFUL ADJUSTMENT

Adjustment on Follow-Up	Rated Employability High	Rated Employability Low	Total
Successful	12	3	15
Unsuccessful	1	5	6
Total	13	8	21

$X^2 = 4.85$ (df = 1), p = .03

Follow-Up of Specific Cases

We will now turn to the individual subjects whom we were able to locate during the follow-up and briefly describe the nature of the adjustment which they made. These will be reported as one paragraph case reports which will also include, where appropriate, their predicted employability status. We will report them in the following groups: high employability, low employability, borderline employability and attrition.

High Employability Subjects

003--Negro female, 19-8 (age 19 years, 8 months), old control, High employability group. Jeanie graduated in June from regular high school classes and hopes to go on to beauty culture school. However, because of the expenses, she needs to work and is currently looking for a job. She worked part time for six months while in school, packaging cookies for $1.40 per hour but got tired of the job and quit. She aspires to be a beautician. Socially, she is quite active in neighborhood block club activities and dates. She hopes to marry eventually. The interviewer's general impression was that she "appears to be on solid ground. Relating well socially, planful, relates maturely." Classification: Successful adjustment.

012--Negro female, 19-5, old control, High employability. Joan dropped out of a two year high school program after one and a half years. For the past year she has been employed by a plating company doing wiring work for $1.50-$1.75 per hour. The job was acquired through her sister who works for the same company. Before this job she did baby sitting and worked three-quarter time in the Job Corps. She left the Job Corps for the better paying wiring job. Joan married four months ago. Before marriage she had numerous social contacts which she no longer maintains. Her future aspirations are concerned with raising a family with no vocational plans beyond this. Generally, she is a small, shy, hard-working girl, basically the same as when she was in the workshop. Classification: Successful adjustment.

014--Negro male, 19-1, old control, High employability group. Two years ago, George terminated from EMH and did not continue to high school. He is presently working in the Job Corps. He has held jobs sporadically but had not been able to take home any income. Does not know what he would like to do in the future. Currently he is a 1-A but has mixed feelings about the Army. He does not have any social contacts and is unable to establish any. Has no plans for the future. Classification: Marginally successful.

016--Negro female, 19-11, old control, High employability group. Lena graduated from high school in June 1967 and has no future plans for continuing her education. Currently she is employed in laundry work earning $1.50 per hour. Previously, she had worked part time at this job for approximately nine months. She has not developed any vocational aspirations. She has a limited number of friends. She got married in November 1966. Both she and her husband are involved in similar kinds of work but at different plants. Her plans for the future are to continue working and to raise a family. She appears to be doing well. Classification: Successful adjustment.

101--Negro male, 19-2, old experimental, High employability group. P. J. quit high school EMH classes after 2 years in 1963. He clearly sees the need for education and wants eventually to go into electronics. Currently he is doing dock work, driving fork-life trucks for $118.00 per week. He worked on silk screening for four months in 1962. In 1965 he drove a truck for a store earning $60 per week. He aspires to go back to get an education, get a job, buy a Cadillac and maybe get married. He has matured much since last interview, and he is very aware of social realities. Classification: Successful adjustment.

108--White male, 19-3, old experimental, High employability group. "Ernie got pretty sick of school" and with a year still to go, he dropped out of school to join the Army. He is currently with the Army in Thailand as a Pfc. with the Engineering Corps learning piping electrical work, etc. He volunteered 14 months ago. He has had friends but has never considered marriage seriously. His future plans are not known. His mother is very proud of him and feels that he has gained confidence and a sense of pride being in the Army. Classification: Successful adjustment.

114--White female, 19-1, old experimental, High employability group. Myrna has completed two years of high school special classes and hopes to complete two more. She has no plans for education beyond high school and has no vocational plans after her schooling is completed. She has no previous work record other than one summer in the Vocational Adjustment Center of the Jewish Vocational Service, which she didn't like. She seems unable to state any future vocational aspirations and is evidently relying on guidance counseling based on her records to pick a vocation for her. She has minimal social contact (1 or 2 friends) and belongs to no groups or organizations. Marriage seems very remote to her. In summary, her "reactions, manner of speech, awareness appear basically unchanged since my last contact with her several years ago." She had "slow, simple, unelaborated responses. Does not appear to be achieving socially." Classification: Marginally successful.

115--White male, 18-10, old experimental, High employability. Tim graduated from special education high school classes in June 1967 and is currently looking for work. His previous work experience includes a paper route and working for his father as a painter's assistant. His vocational aspirations are still unformed. He is registered with the Illinois State Employment Service; his social contacts are minimal. He has one close friend from elementary school and two other friends from the workshop whom he sees occasionally. He has had two double dates and finds marriage a very remote thought. The interviewer found him "Much more spontaneous in conversation but otherwise no notable change." Classification: Successful adjustment.

202--White female, 18-3, new control, High employability group. Rhoda dropped out of school to work about 1 and a half years ago. She is presently employed in assembly work for an electronics firm. She feels that she has easily mastered the job. She found the job through a neighbor and has held it for one and a half years. She earns $1.55 per hour. As for the future--she has not thought about it. She has a lot of friends; all people that she works with. She does not have friends of the opposite sex and firmly refuses to think of marriage. She impressed the interviewer as being a young, gracious and energetic lady. She has a well-balanced life with no real concerns about future aspirations. She seemed happy. Classification: Successful adjustment.

206--Negro male, 18-8, old control, High employability. Curtis left school two years ago after hitting a teacher. He was referred to the Job Corps but quit after three months because he "couldn't get along." For the next year and a half, he worked as a truck driver's assistant. When he volunteered for the Army, he was rejected because of the incident in which he struck his teacher. He says he would like to go to trade school but has made no concerted efforts. He is now in jail for car theft. He has a number of friends and often picks up new friends who "steer him toward anti-social behavior." He had planned to marry, but the girl decided to marry someone else. The interviewer's impressions were that he had difficulty with authority figures. However, his ability to hold a job for one and a half years and help support his family demonstrates good potential. Classification: Marginally unsuccessful.

306--Negro male, 18-10, new experimental, High employability group. Joe is currently a high school senior and hopes to graduate next year. He plans to go to Wilson J. C. and then to Illinois Teachers South. He is presently working on a summer job which involves operating machines in a cabinet-making firm and earns $1.75 per hour. In the future, he aspires to become a math teacher. He mentioned that he missed graduating this June due to credit shortage and had to be reclassified for the draft. He is concerned about "Uncle Sam taking him." His high educational and occupational aspirations seem unrealistically high, but the interviewer thinks he has the capacity to respond to realities without significant self-impairment. Classification: Successful adjustment.

309--White female, 18-6, old experimental, High employability group. Karen is still in school and will graduate next year. She plans to continue with her education and plans to go into electronics or secretarial work. She has sought summer employment but without success. She aspires to be a radio operator for the Federal Communications Commission. Karen has learned to type on her own and is taking driving lessons. She is also taking a course at home related to her future job. She does not claim to have friends of her own sex. She did not like the ones she had. She has been on a few double dates but did not care for them. Marriage does not seem possible in the near future. Karen belonged to a Jr. Achievement group, but it fell apart. She is interested in joining a radio club at school next year. She is apparently a social isolate but keeps herself heavily engaged in learning new skills. She is quite verbal. Classification: Successful adjustment.

310--White male, 18-4, new experimental, High employability group. Gil had to drop out of high school in June 1964 because he "just couldn't keep up." He is currently employed at Bell and Howell assembling tape recorder mechanisms and likes it very much. He has been there five months and earns $2.45 per hour, after two raises. He previously worked at packing graduation gowns for one year. After being laid off, he held other "bits of work." He is happy in his present job and wants to keep it. He has friends, but had to change from friends previously involved in gang-like activities. He dates 2 girls but does not want to get married. He belongs to the Y, where most of his contacts are maintained and where he probably has a leader's role. His mother is very happy with him. He aspires to hold his job and earn. He seems satisfied and happy. He is friendly and relates in a mature fashion. Classification: Successful adjustment.

Low Employability Subjects

001--White female, 19-5, old control, Low employability group. Laura graduated in June 1967 from the Special Education High School program and is currently not employed. She is looking for work but with not much success. She has held no position in the last three years, and her vocational aspirations are not clear. She has some vague notion of being a file clerk. Socially, Laura is an isolate with sporadic contacts. Mostly she stays at home watching T.V. and goes to movies occasionally with girl acquaintances. She is interested in boys, but contact with them is limited. She expressed an interest in marriage. She does not belong to any clubs or organizations. The aspiration to be a file clerk seems to be beyond her capacity. She is uncertain about future employment. She has a pleasant personality, but did not verbalize much. Classification: Marginally unsuccessful.

005--White female, 18-6, old control, Low employability group. Iris left school in June 1966. She is not currently employed and has not been employed in the last three years except for attending the Vocational Adjustment Center (JVS) in summer 1966. She does not aspire to work although occasionally dreams about clerical work. Socially she has few friends of either sex. She has not formulated any plans for the future and is still a long way from being able to work in competitive employment. Her mother is frequently ill, which is used as an excuse for keeping her tied to the home. Classification: Unsuccessful adjustment.

104--White male, 19-11, old experimental, Low employability group. Three years ago, Mike was terminated from special classes. He has no further plans for resuming education in the near future. He is not currently employed, but has worked in a sheltered work situation in the Chicago School for Retarded for about 2 years. He wants to be a shoe salesman. "I want to follow in my father's shoe step." Mike has a few friends of the same sex, and more of the opposite sex. He does not anticipate marriage. Mike's social activities are restricted to contacts through the Chicago School programs and the YMCA. His participation in these clubs and organizations has been passive. He has not made much progress since the last interview. He does not have any clear plans for the future. A full case study of Mike is found in Chapter XII. Classification: Unsuccessful adjustment.

208--White male, 19-3, new control, Low employability group. Vince left school (EMH classes) at the grade school level and has no plans for resuming his education in the near future. He is currently unemployed. During the last three years he held jobs for very brief periods which he had to give up for various reasons. In June, 1966, he worked as a mechanic's apprentice for 2 weeks, but had to quit under pressure from his mother. In Sept., 1966, he worked as a laborer for one week but was laid off. Finally, he worked as an unskilled factory worker for three weeks. He said he quit because of the supervision. His future vocational aspirations seem to be very unclear and are deteriorating generally. Socially, he is an isolate. He does not belong to any clubs or organizations. He has been referred to and has just started working in a sheltered workshop at the Chicago School for the Retarded. He has no other plans. His family, especially his mother, are undermining the likelihood of adequate employment--although he feels he is otherwise capable. Classification: Unsuccessful.

210--White female, 19-0, new control, low employability. Pamela is still in school. She is in her third year of special classes and will graduate after two more years. "School doesn't bother me any more because I'm in special classes now." Her mother wants her to go on to business college. She has never been employed. Her future vocational aspiration, office work, seems to be heavily influenced by her mother. Otherwise, her general plans for the future are completely unformed. Socially she is very active, with school activities, parties, etc. She reports having "too many" friends. She has two boyfriends but wants to wait a while for marriage. Pamela appears "very spontaneous and happy . . . a person living a gratifying social life but not as yet ready to begin exploring the future and its implications." Classification: Successful adjustment.

304--White male, 18-5, new experimental, Low employability group. Stuart dropped out of school in 1965 and has no intentions of resuming his education. He has been employed in a plating company and has been working with machinery for 1 year, making $1.35/hr. Presently, he is laid off for a week. He worked as a bus boy at the YMCA cafeteria for 6 months prior to the present job. He has no future plans and seems content to hold the present job. He has a few friends, mostly younger children in the neighborhood. He gave the impression that he had never thought of dating or marriage. He is a member of the Y, where his father works. He has no plans for the future. He tends to hoard his earnings. He seemed aware of his slow progress. Stu is making marginal adjustment with no thought about the future. Classification: Successful adjustment.

308--White female, 19-8, old experimental, Low employability. She is not employed and is currently in the Vocational Adjustment Center (JVS). She has held several packaging or assembly jobs for short periods of time and aspires to work in a cafeteria or in a hospital as a tray girl. She considers any kind of a job suitable except factory work. She has a few friends and dates very seldom. She does not talk about getting married. However, she has many sexual fantasies. She has been a member of a bowling group and a member of a club for retarded teenagers, although she is currently not a member of any group or organization. The counselor sees her problem as personal rather than vocational. Classification: Marginally unsuccessful.

312--White male, 19-6, new experimental, Low employability group. Art dropped out of school 3 years ago and is currently working as a mail handler at a post office earning $2.44 per hour. Previously, he worked at another job for five months. He wants to continue at the post office and has no other vocational aspirations. He is virtually an isolate, has never dated and has not thought of marriage. He had participated in a club program but did not like it. He has no plans for the future but saves money for vacations and 'dates.' He impressed the interviewer as being more aware and world-wise regarding jobs, geographical locations and general social problems than he had been. Classification: Successful adjustment.

Borderline Employability Subjects

007--White female, 19-11, old control, Borderline employability group. Jean graduated from a high school special program in June 1967. She misses school but is not sure whether she wants to resume her education. Her parents have urged her to join a modeling school, but she is not keen on it. She is currently working at the Lutheran General Hospital, full time in housekeeping work and seems to be happy in it. She worked part time as a teacher's aid at a school from February 1967 until recently. This job was secured through the school work-study program, giving her an income of $50 per week. During the last three years, she worked for a few days at a publishing house in filing but quit due to a quarrel with a colleague. She is too involved in the present job to think about future vocational aspirations. She has many friends and dates one boy (also retarded), but marriage is remote. She is very active in social organizations and clubs. She seems to be functioning well, particularly in the social sphere. Classification: Successful adjustment.

207--White male, 19-5, new control, Borderline employment group. Peter dropped out of school in 1965 after about two years of high school. He is currently employed as a houseman or clean-up man in a hotel. He procured the job on his own initiative and has held it since November 1966 earning an hourly wage of $1.40. Before this he did chores on a farm while visiting relatives in Michigan. His vocational aspiration consists of just holding a job, no matter what kind. He does not have many friends. However, he was married in October 1966. He does not participate in any social organizations. His counselor feels that he leads a "concrete existence." He is happy to go from day to day on a steady job that pays. Classification: Successful adjustment.

Attrition Group Subjects

002--White female, 20-0, attrition from old controls, Year I. Candy graduated from high school special classes in January 1966 and has no plans for further education. Presently, she is engaged in filing work where her mother is also employed and earns $65 per week. Previously she worked at Victor Computing as a key punch operator for six months. The company sent her for IBM training, but she did not like the work and so quit. Her father was unable to state what her future vocational aspirations were. She appears to have quite a number of friends. She has a steady boyfriend but has not thought seriously of marriage. She seems to be doing well in all spheres with good support from family and relatives. Classification: Successful adjustment.

004--White female, 20-0, attrition from old control group, Year II. Martha dropped out of high school special classes after completing one and a half years. She married three years ago and now has two children. Her husband has a steady job, and she seems to be quite happy. While not working at the present time, she has been gradually breaking ties with old school friends and appears to have no close friends. She is not active in formal groups. She "appears to be happy, 'fulfilled,' and functioning reasonably well in wife role." Classification: Successful adjustment.

010--White female, 19-5, attrition from old control group, Year II. Betty attended special classes until June 1965. Other than occasionally helping out in her uncle's restaurant, she has no work history over the past two years. She is married, and her husband is employed in a candy factory. While she has several friends, her memberships in clubs or organizations are minimal. Classification: Successful adjustment.

017--White male, 20-0, attrition from the old control group, Year II. Jim dropped out of an ungraded school program in 1963 and has no further plans for education. He is currently employed doing stock work for $1.50 per hour. Jim has a history of numerous short-term jobs, none of which he has held for more than one month. He joined the Navy in 1963 and was discharged shortly thereafter for disciplinary reasons. Three weeks ago he was discharged from the Job Corps after 16 weeks of training for disciplinary reasons; however, he was offered another assignment. Jim has no sound vocational aspirations but does hold welding as a possibility. His main interest at present is in getting a car. Socially Jim tends to be a loner. He has had minimal contacts with the opposite sex and does not consider marriage seriously. "Apparently after about three or four weeks on the job, anti-authoritarian behavior emerges and causes him to be discharged." Classification: marginal adjustment.

107--White female, 20-1, attrition from old experimental group, Year I. Bonnie dropped out of school in June 1963. Her work history over the past three years involves five different jobs--all of short duration (two to eight weeks) with the exception of her present job. She has worked as a waitress in a drive-in restaurant for over a year and is making $1.35 per hour. Classification: Successful adjustment.

109--White female, 20-7, attrition from old experimental group, Year I. Sharon graduated from special education high school classes in June 1966 and graduated from beautician school in June 1967. She is not currently employed but is studying for the state board examination for beauticians. She plans to work in a beauty salon once the exams are completed. She has not been active socially because "I've been busy with my school so I haven't had a chance to see people." She dates occasionally, but marriage seems very remote. She impressed the interviewer as being mature, knowledgeable and fairly sophisticated. Classification: Successful adjustment.

111--White male, 19-11, attrition from old experimental group, Year II. Bill quit EMH classes about three years ago. He has a job "attaching brackets on boards." The firm he works for makes globes and maps. He did odd jobs for a "McCormick Project," but he feels his present job, which his mother found for him one year ago, is the only one he has had. Quite content with his position, he stated, "It's a good job, and I don't want to leave. My boss is good to me." His friends are primarily his co-workers (of the same sex). He earns $1.60 per hour, but states that he cannot afford to date. He stated that he was planning to be a bachelor. "It's cheaper." Rather than traces of boyish mannerisms observed during the program, he seemed quite articulate and sober during the interview. And he was quite pleased that he was contacted again. Classification: Successful adjustment.

112--White female, 19-5, attrition from old experimental group, Year I, twin sister of Betty. Dora, left high school in June 1965 after completing one and one-half years in special classes. For two years she has worked part time as a cashier in the protective setting of her uncle's restaurant. Most of her friends are of the same sex, but she does date "here and there." The possibility of marriage is quite remote at the present time. According to her father, Florence maintains the same rather "aimless" planfulness to her life that she exhibited in the program. Classification: Unsuccessful adjustment.

209--White female, 18-3, attrition from new control group, Year III. Martha graduated from grammar school in June 1967. She has neither plans to resume education in the near future nor a job. She has no friends, and she belongs to no clubs or organizations. She appeared somewhat depressed during the interview and so it is difficult to know if the information given was an accurate representation of her life. Classification: Unsuccessful adjustment.

307--Negro female, 18-11, attrition from the experimental group, Year III. Vera is still attending special classes and has one year to complete before graduation. She is considering continuing her education in business school, although it appears to be a rather weak alternative. She has very weak vocational aspirations, "Maybe office work . . . any kind of work." Although not currently employed, she has held three part-time jobs (packaging and piecework) which were arranged through her school for a total of about two months. Due to her slowness, she was unsuccessful. She has no personal friends and has not dated, though she maintains minimal contacts through YWCA and church groups. She impressed the interviewer as being basically unchanged since his previous contact in the workshop with her. Classification: Successful adjustment (marginal).

Discussion of Follow-up

In this chapter, we have identified that, for those subjects whom we could locate five years after the beginning of this study, the predictions made for employability on the basis of their performance in the diagnostic assessment setting have been validated. The one member of the high employability group who was rated unsuccessful had demonstrated that he could hold a regular job for over a year, but found difficulty with the law when, as he perceived it, his induction into the Army had been summarily voided. Of the three low employability group members who had found successful employment, two were white males who had been members of the experimental group and were perceived by their foreman as showing improvement during the course of the program, though still falling at that point below the median for the entire group. The third, a white female, was still in school.

Overall, approximately 70% of the subjects seem to be making a successful adjustment. Some are still in school. Girls are working as waitresses, nurse's aids, laundresses, or are being trained as beauticians. A few of the girls are married and raising families. The males are in unskilled or semi-skilled jobs. These range from driving a fork-life truck to being a mail sorter. One boy was in the Job Corps, while another was successfully adjusting to the Army. Even subjects who were demonstrating successful employment, however, often still manifested feelings of social isolation. Apparently, it is easier to win a job than to win friends.

Our finding that roughly 70% of our subjects were successful in gaining employment parallels many of the other studies in the field which, when following up EMH youngsters, found that between 65% and 85% of them are successfully employed.

In this final follow-up, we may also observe the emergence of a delayed or "sleeper" effect for the experimental treatment. Eleven experimental and twelve control group members were located in the follow-up. Nine of the eleven experimental subjects (82%) were rated successful, against eight out of twelve controls (67%). When the attrition group subjects are included in this analysis, 13 of 16 experimental subjects are rated successful (81%), while only 11 of 17 controls are so rated (65%). Thus, the failure rate among controls is almost twice that of experimental group subjects (35% vs. 19%).

We must, however, resist the temptation to overinterpret at this point. There is no way of knowing whether the patterns of success and failure manifested by our subjects when they are 19 or 20 years of age will be maintained for the coming years. We can only report the data as we presently have them. At this point, we have reason to be encouraged. On scientific grounds, we have demonstrated that our attempts to predict employability have been successful. On humane grounds, we can only be pleased that so many of the youngsters who participated in this program, whether as experimental or control group members, are doing well in the world as young adults.

CHAPTER XIV

GENERAL DISCUSSION

The subtitle of this report, *An Experimental and Longitudinal Study*, appears in retrospect to have been somewhat misleading. The design of this research was both experimental and longitudinal with the anticipation that we would be able to examine the simultaneous interactions of *experimental treatment* and *time*. However, we learned little from the experimental treatments because no discernible effects of the experimental programs were observed. The only exception was the possibility of a "sleeper effect" for the experimental treatment with respect to eventual employability. Therefore, the bulk of the study has been longitudinal per se, with the interaction between *individual differences* and *time* the focus for analysis and interpretation.

Many of the findings of the individual parts of this research have already been discussed in the chapters that precede this one. In this General Discussion chapter we will therefore discuss only those issues that seem to cut across the earlier divisions of this report or whose implications have the greatest general import. We will examine the following topics in turn: the general ineffectiveness of the experimental treatment, the prediction of employability, social class and color differences in vocational development among the handicapped, a theoretical model for vocational development, a design for programmatic research on the development of a wide range of characteristics among the handicapped and the need for continued close cooperation between research and service institutions in the conduct of such research programs.

Results of Experimental Treatments

The major research hypothesis which motivated the planning and implementation of this research and service program predicted that an experimental group provided with an intensive vocational rehabilitation program early in adolescence would surpass a comparable control group in vocational development. This was consistently not the case. There were no differences, at least during the major period of this study, between the experimental and control groups in measured employability. What might have accounted for this non-finding? A number of possibilities must be considered.

One problem may have arisen from the nature of the treatment provided for all of the subjects. In the present program, although highly differentiated diagnoses were made of each participating subject, the treatment program involved a rather limited set of variations on a single central theme. That is, the training program for every subject was built around the vocational development workshop. The atmosphere which characterized the workshop situation was clearly one of general warmth, acceptance and permissiveness. Relations between clients and foremen were easygoing and informal. Client problems were dealt with sensitively and immediately. The emotional climate was far more similar to a therapeutic milieu than to any typical industrial work situation.

It was by no means clear that this kind of milieu was equally rewarding or therapeutic for all subjects. The highly permissive and supportive environment is probably most effective for only a certain range of client types with certain kinds of disabilities at particular points in their development. It is not necessarily universally fruitful for all those who are labelled as mentally handicapped. We were in the position of providing a somewhat uniform remedy for a group of individuals whose maladies ranged over a considerable continuum. It seems likely that for many of our subjects the most effective treatment setting would have been a situation where differential rewards were provided for differential performance and where the relations between superordinates and subordinates were far more formal and comparable to those of real work situations.

The treatment setting could still be a sheltered workshop. But for some subjects the specification of task sequences, goal expectancies and reinforcement contingencies might follow the basic principles used in current studies of behavior modifications. Thus, it may not be that treatment per se is ineffective in modifying vocational development but that more effective tailoring of treatments to individual problems is required.

There is also reason to believe that we did not truly have a comparison of experimental and control groups in this study, but more accurately a comparison of two different kinds of experimental groups. Interviews with subjects and their parents, as well as the less formal but equally revealing comments made by them over the years of contact, suggested that even control group status was perceived as a treatment condition by many of those whom we had deemed "merely control group members." That is, although the planner of this investigation may not have perceived the one-week diagnostic period each summer with its several interview and testing sessions as defining an experimental treatment, it was apparent that many of the control group members themselves did so define it. They spoke of looking forward all during the year to their week of work and of appreciating the kind of attention they received from the interviewers and foremen. Thus, it may well be that in reporting no difference between experimental and control group members, we were in fact demonstrating that a one-week period of supervised work activity together with ancillary experiences such as interviews and testing provides as much impetus to the vocational development of a youngster as does a more extended dose of a similar remedy.

Contacts with the members of the control group and their families totaled approximately 70 hours over the entire course of the program. Each experimental group member received the same 70 hours of diagnostic contact plus an additional service contact of approximately 330 hours. It is possible that the major impact of such a program is made by spacing less than 100 hours of contact over a relatively prolonged period. Superiority for the group receiving more treatment may only accrue when the number of hours of service is increased greatly over that presented in the current study.

Finally, it is conceivable that the characteristics contributing to vocational development are already so stable by age 14 that little change is possible. If this is the case, only programs of early identification of the mentally handicapped and subsequent vocational rehabilitation for them as preadolescents can effectively deal with these problems.

As we reported in the review of the literature, estimates of the proportion of EMH youngsters who achieve successful employment adjustment range from 66% to 85%. Thus, in any random sample of EMH adolescents we would expect that approximately three-fourths would achieve some modicum of successful vocational adjustment without the interference of a special treatment program. How does one distinguish those who will succeed without help from those who will need it? The next section will deal with this question.

The Prediction of Employability

In Chapter XIII it was reported that the Employability Index had been validated as a predictor of employment success. It must not be forgotten that among all the psychometric indicators, the Purdue Pegboard was the best single predictor of the Employability Index. The effectiveness of the Purdue as a predictor of employability is due to the fact that it is minimally sensitive to differences in past cultural experiences and maximally sensitive to current motor learning ability, motivation and dexterity. This is also true of the Coding subtest of the WISC which was also a very effective predictor of employability.

These findings are not without corroboration from other research. Tizard and O'Connor (1956) reported in one of their studies that the two best predictors of employment success for a sample of adult retardates were finger and manual dexterity. When dealing with mentally handicapped individuals whose employment will tend to be in the unskilled or semiskilled categories, the importance of learning ability, motivation and speed cannot be ignored. Whereas it is unlikely that the Purdue Pegboard would be an effective predictor of employment success for average and above average youngsters across a wide range of employment conditions, its effectiveness in the present study must be emphasized.

It has been our contention that the best predictions of any long-range criterion result from an attempt to simulate that outcome as closely as possible. In the present research we attempted to simulate the conditions of competitive employment in the diagnostic assessment workshop. We found that this simulation was extremely effective for making accurate predictions of vocational success. However, the Purdue was almost as good a predictor of employability as the Employability Index itself. Obviously, the Purdue is a much less expensive and easily administered predictor than is a five-day diagnostic assessment workshop. Of what use, then, is the diagnostic assessment period if the Purdue alone is so effective a predictor of employability?

We must make a distinction here between the prediction of employability and the diagnosis of unemployability. The Purdue is most effective in discriminating those who are very likely to be employable from those who may not be. Below that cut-off point the Purdue is practically useless for diagnosing the components of the unemployability of a subject and the most likely strategy for coping with that unemployability. The power of a diagnostic assessment approach is that it combines predictive effectiveness with diagnostic sensitivity. That is, by observing subjects in a diagnostic assessment situation we can not only identify which subjects will experience difficulties; we can also predict the nature of their specific problems.

We would suggest that the prediction and diagnosis of unemployability is a two-stage process. The first step should involve the use of easily administered instruments such as the Purdue to distinguish those subjects who are clearly employable from those whose employability is questionable. The second step involves the use of a diagnostic assessment for the latter group. The purpose of the second stage would be the differential diagnosis of the causes of unemployability for those subjects. As a result of this diagnosis, a subject could be recommended for any of a series of alternative treatment programs or for an immediate work-trial of a particular kind. The description of this proposed second stage is quite similar to the diagnostic approach currently employed in the Vocational Adjustment Center of the Chicago Jewish Vocational Service.

We also identified striking differences between Negro and white youngsters in the prediction of employability. These are of great importance both to the public schools and for those who are concerned with vocational placement and training. This contrast between the Negro lower-class, and the white middle-class youngster is examined in the following section.

Social Class and Color Differences in Vocational Development

We have generally observed that the fact of mental handicap seemed far less debilitating vocationally to the lower-class members of our sample than it did to the middle-class members. It would appear that although social class and mental retardation generally are highly related, those who suffer most at the hands of retardation are the exceptions to the usual relationship between social-class and retardation. That is, to be both middle-class and retarded is to be under a combined set of tensions or pressures which makes life far more difficult than it does for the retarded lower-class child.

It appears from our findings that the social and home life of the middle-class retardate are far less normal than they are for his lower-class peer. Lower-class parents do not deal with their ostensibly mentally handicapped child in a manner significantly different from the way in which they deal with their other children. In contrast, the mentally retarded child of the middle class seems sheltered and protected to an extent that eventuates in later social and vocational disabilities out of line even with his earlier intellectual deficit.

The contrast between the home environments of the high and low employability groups was especially striking in this regard. It will be recalled from Chapter VII that the low employability group appeared to come from a more advantaged environment than the high employability group. At that time it was suggested that the meaning of environment for a particular characteristic can only be judged when the nature of the developing organism which is being affected by the environment is taken into account.

It may be useful to distinguish here between static and dynamic descriptions of environments. Static environmental descriptions are concerned with such measures as parent occupation, education, income and social class. The dynamic elements of an environment involve the kinds of things that go on in that setting and the patterns of interaction that take place therein. It will be recalled from Chapter VII that the low employability group appeared more advantaged than the high employability group in terms of the static environmental indices. However, if we turn to such areas as: Chores performed around the house, social relations within and outside the family and the nature of the activities engaged in by the subjects, these dynamics aspects of the environment distinguish between the high and low employability groups quite effectively. It will usually be the case in a sample of average and above average subjects that the static and dynamic aspects of the environments will be highly congruent. However, in the present sample of subjects, it is most intriguing that these two aspects of environment are incongruent. The apparently abundant level represented by the static variables seems to preclude the possibility that the most vocationally optimal dynamic elements of the environment can manifest themselves.

It appears likely that different treatment programs are necessary for these different patterns of retardation. We must view retardation, not simply as a cognitive deficit phenomenon, but rather as an entire complex of variables which can be understood only when the intellectual deficit is seen in the context of the social and interpersonal conditions under which it has developed.

Toward a Theory of Vocational Development

We are only beginning to gather the necessary data for the construction of an empirically based theory of vocational development among the handicapped. We have seen in the present study that vocational development is a process which is intimately interwoven with intellectual, social, physical and personality development. We have been impressed by the great stability of the employability-relevant measures over the time period represented by this study. Since Bloom has demonstrated that the components of intelligence, academic achievement and many other characteristics stabilize very early in life, the findings of this study would suggest that the roots of vocational development also lie in early childhood. Vocational development is a process that has begun long before the child knows what a job is, much less seriously worries about what he is going to be when he "grows up."

We have observed that the nature of the environment in which the child is raised interacts with his pattern of vocational development. An environment which constricts social development also constricts vocational development. This observation reinforces Erickson's conception of industry as both personal and social competence. Work is invariably done with others, and he who has not learned to live comfortably with others will suffer a clear deficit in his ability to function in a vocational setting.

All these findings also suggest that any program of vocational rehabilitation for the very young must involve not only attempts to work with the youngsters themselves but also attempts to sensitize the parents to the importance of the home setting. Although it will be impossible to remove the discrepancy between the general expectations of middle-class parents and the competencies of their retarded children, it should be possible to help them to create environments that will not overemphasize the incongruence.

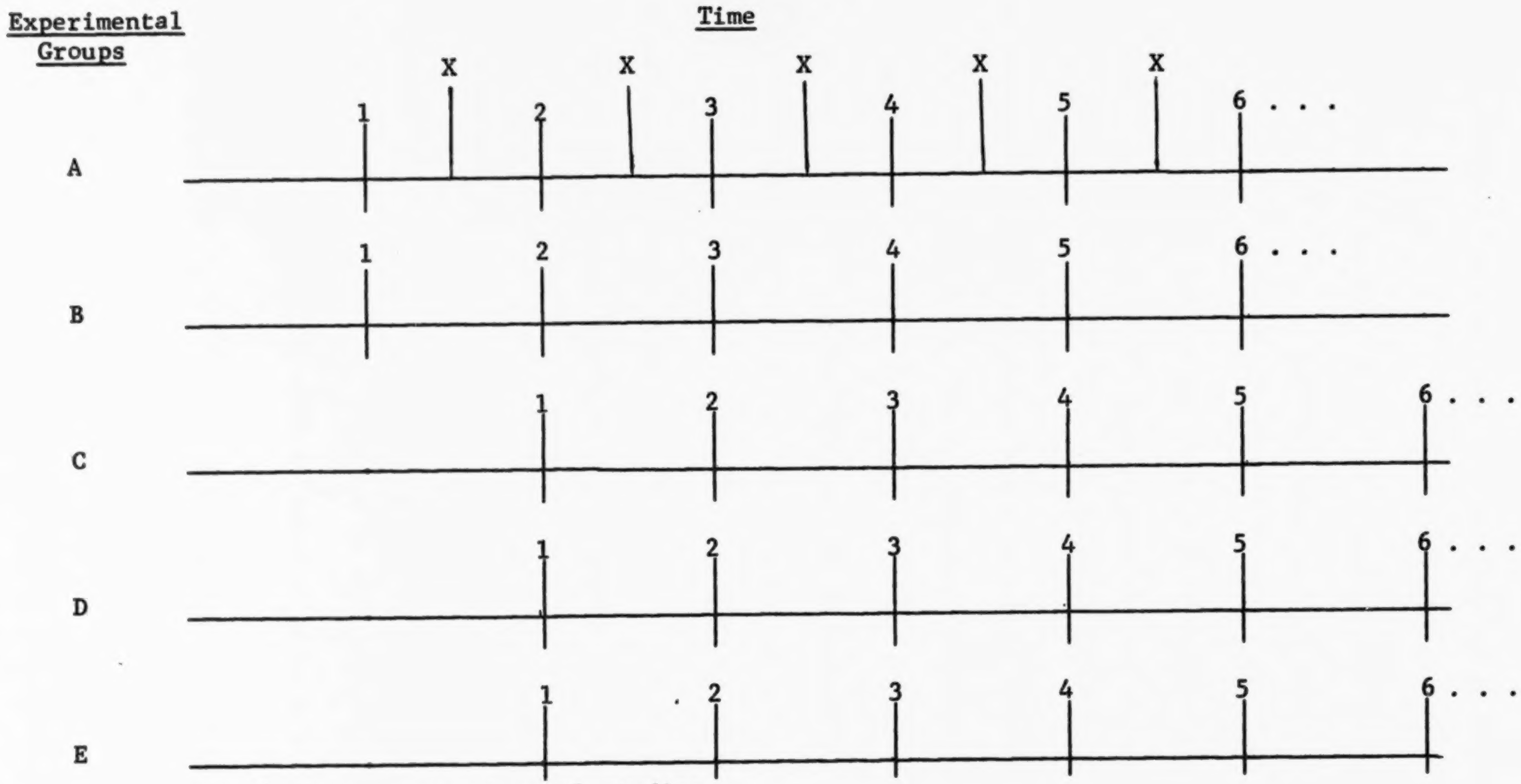
We suggested earlier that a theory of vocational development must await the parallel development of empirically based theory in related disciplines. Yet, any functional theory of vocational development must do more than simply borrow from the findings of other research. We must begin and maintain an ongoing program of theoretically relevant empirical research on problems of development in the handicapped using the best behavioral science tools available. What might the design for such a program of research look like? The next section of this chapter will be devoted to that topic.

Design for Programmatic Research on Vocational Development

We will now describe a model for research on the problems of vocational development in the retarded which, on the basis of the experiences of the present study, we believe would result in the

FIGURE 39

IDEAL EXPERIMENTAL-LONGITUDINAL MODEL
FOR PROGRAMMATIC RESEARCH ON THE RETARDED


Experimental Groups
Time
A
B
C
D
E
X
1
2
3
4
5
6 . . .

X = Short term experimental studies.

1, 2, 3 . . . = Scheduled repeated measures across broad-range of variables.

most fruitful program of empirical research. Figure 39 describes the general model which we would advocate.

Clearly, the most effective research design for studying the interaction of experimental treatments, individual differences and time is the experimental longitudinal design. Such a design requires the availability of large pools of subjects, the cooperation of service agencies representing contrasting programs and treatment philosophies, and the research freedom to do the necessary random assignment of individuals into treatment programs. Such designs would allow the investigation of complex questions concerning the manner in which certain kinds of programs function for many kinds of subjects over varying lengths of time.

It will be noted that we have suggested a series of experimental groups in the place of experimental and control groups. It is very likely that the concept of a control group per se is already becoming a research anachronism. It can be seen in the present study that what was designated as a control group, by dint of its very participation in the research aspects of the program, seemed to have gained some benefits. Rather than comparing a group that gets service with one that gets nothing at all, it would behoove us to compare groups which receive different patterns of service in order to examine the relative effectiveness of these different patterns. We are rarely confronted by the choice of doing something or doing nothing. Usually we are are confronted with alternative choices of action. This kind of research would help answer questions concerning choices among treatment alternatives.

It will be noted from Figure 39 that we have also anticipated the likelihood that the investigators will learn from their experiences and make changes in their research models. Instead of beginning all experimental groups at the same time we have described a staggered longitudinal program. That is, groups participating in the longitudinal study are selected to begin at different points in the planned ongoing research operation. Thus, if after the first year of the program it is decided that a different way of selecting samples or a changed treatment program is most appropriate, then this can be applied in the second set of groups beginning the program. Additionally, the use of staggered experimental groups will allow for the replication of results. This is very important since ultimately the criterion by which we identify fruitful educational research is not its statistical significance but its replicable educational significance.

Data analysis in experimental-longitudinal designs need not be limited to comparing groups. Investigators are currently developing new ways of answering experimental questions with longitudinally collected correlational data. For example, the method of cross-lagged panel correlations described by Campbell (1964) provides for the making of causal inferences on the basis of changing patterns of correlations observed longitudinally.

Finally, we have indicated in Figure 39 that short-term experimental studies can be conducted within the context of the overall experimental-longitudinal design. In this manner, a truly comprehensive program of short and long-term research can be conducted simultaneously.

We believe that this study has demonstrated without question the importance of triangulating on complex psychological constructs; that is, using a range of research methods for measuring various human characteristics instead of limiting oneself to one method for the measurement of each characteristic. Thus, we advocate the use of a broad range of measures in the investigation of developing personality and cognitive characteristics.

All the foregoing suggestions are contingent upon the confrontation and cooperation between the research and service agencies of our communities. It is the rare service agency which takes seriously its responsibility as a setting for important research. Too many research institutions disdain cooperation with service agencies because of the applied nature of the latter's responsibilities. Yet, in the area of vocational development the best experimental treatment must surely be a long term service program. Joint efforts will be necessary to study the effects of such programs.

The present study may serve as a prototype for the kind of fruitful investigation that can be conducted cooperatively between universities and service agencies. We believe that this research has demonstrated that theoretically-relevant behavioral science research can be conducted in a service setting without compromising the standards of either research or service.

CHAPTER XV

SUMMARY AND CONCLUSIONS

The objectives of this research have been 1) to study the process of vocational development for a sample of educable mentally handicapped adolescents, 2) to examine the effects of a treatment program begun in early adolescence in modifying the process of vocational development and 3) to identify those variables which contribute to and may hinder the success of these youngsters in their efforts to become successfully functioning adults.

The design of the study was experimental and longitudinal. That is, groups of mentally retarded adolescents were followed longitudinally, some of whom received a program of workshop centered rehabilitation services and some of whom acted as controls. Assignment to the experimental and control groups was made on a random basis. A diagnostic assessment of all subjects was conducted annually during which a wide range of vocational, intellectual, social and personality measures were administered. A total of 55 subjects began the program. Thirty-six remained at the end of the third year of the study. Five years after the program had begun, a final follow-up of all subjects was attempted in order to test the validity of predictions made as part of the diagnostic assessment procedures.

Summary of Findings

In this chapter we shall summarize the results of this study in the order in which the findings were reported in the body of the text. We shall then examine the conclusions which can be drawn from these results and the implications of these conclusions for a number of disciplines.

Stability and Change

Examination of the stability data for the measures used in this study revealed that most characteristics considered central to the process of vocational development are already highly stable by early adolescence. Stability coefficients between Year I and Year III of the study for the total group of subjects ranged from .86 for WISC IQ and the Purdue Pegboard to .43 for level of aspiration. In general, the stabilities of the variables were quite high, thus precluding the likelihood that differential changes in experimental and control group subjects were taking place. Subsequent comparison of the mean scores of the experimental and control group subjects on the basic status variables used over the years of the study failed to reveal any statistically meaningful differences between them.

It was observed that a cluster of variables seemed generally to covary systematically over the years of the study. These variables, dubbed the "competence cluster," were Production, Diagnostic Ratings, IQ, Purdue Pegboard and Vineland Scale of Social Maturity. It thus appeared that high productivity, worker-appropriate behavior, manual dexterity, intelligence and social maturity were characteristics that were positively intercorrelated in this sample of EMH youngsters. The observation of this clustering was subsequently confirmed through a factor analysis.

An index of employability was then derived by combining Year III scores on Production and Ratings. This index was used to divide the sample into two groups: A high employability group and a low employability group. It was observed that there were large significant differences between the high and low employability groups during both Year I and Year III of the study on most of the basic status variables used in the study. The only exceptions were two variables related to the self-concepts of the subjects, the Self-Concept Scale and level of aspiration, on which the low employability subjects had higher scores.

A multiple regression analysis using the employability index as the criterion showed the Purdue Pegboard to be the best single predictor of employability. Scores on the Purdue during the first year of the study accounted for 48% of the variance in third year employability. Nine other predictor variables in concert could account for only an additional 10% of the variance in employability independent of the Purdue.

Comparison of Year I scores for the attrition group (N = 19) and the group of subjects who remained for the duration of the study (N = 36) showed not a single statistically significant difference between the two groups.

Ratings of Work Behavior

The Diagnostic Rating Scale was used daily during each five-day diagnostic assessment period to observe and judge the work behaviors of all subjects. No differences between experimental and control group subjects were discerned. However, the differences between low and high employability group subjects suggested that the personal and interpersonal characteristics of the subjects were as relevant to their employability status as were their productive capacities. The rating scale item distinguishing between the two groups most effectively dealt with the presence of odd or inappropriate behavior. The findings of this chapter were useful in identifying the behavioral components of employability among the mentally handicapped.

Intelligence

Both experimental and control group subjects showed gains in IQ over the course of the study. No differences between the groups in these gains were discerned. WISC IQ was significantly higher for high employability subjects than for low employability subjects. Analysis of the subscales of the WISC revealed that this superiority was primarily a result of four WISC subtests: Comprehension, Similarities, Picture Arrangement and Coding. A subsequent factor analysis of the WISC subscores for all three years generated four factors, two of which appeared relevant to vocational development. These factors were closely related to the previous analysis of subscales distinguishing between high and low employability group subjects.

Assessment of Environments

Analysis of the interviews conducted with the subjects and their parents during each year of the study demonstrated that there were substantial differences between the environments of the high and low employability groups. It appeared that the low employability subjects came from a more advantaged environment than did the high employability subjects. More than half of the high employability subjects were lower-class Negroes, while the bulk of the low employability subjects were middle-class and white. Substantial differences were observed in the social relations, home and neighborhood activities and general family characteristics of the two groups. In interpreting these findings, the importance of judging the effects of an environment in terms of the characteristic being influenced and the nature of the developing organism was emphasized.

Projective Drawings

Scores on the projective drawings failed to manifest any consistent or interpretable relations with any of the other major variables in the study.

Level of Aspiration

It was observed that the magnitude of the level of aspiration ratios of subjects tended to correlate negatively with the employability index and the employability-related competence cluster. Closer inspection of the distribution of level of aspiration ratio scores showed that members of the high employability group set consistently more moderate levels of aspiration than did their low employability counterparts, who tended to set either very high or very low aspiration levels. Analysis of year-by-year changes in level of aspiration patterns showed that high employability subjects began the first year of the program setting more pessimistic levels of aspiration than did low employability subjects. By the third year, however, almost all the aspiration patterns of high employability subjects had shifted to optimistic or realistic, while low employability subjects had failed to shift at all. The relations between patterns of goal-setting behavior and vocational development were then discussed in the light of these findings.

Comparisons of White and Negro Subjects

Negro subjects were observed to be consistently superior to white subjects on most measures used in this study. Their rated employability was much higher, as reflected in the placement of ten Negro subjects in the high employability group and only three in the low employability group. These differences were interpreted in terms of the contrasting reactions to mental retardation in the environments of white middle-class and Negro lower-class families. Evidence for these environmental differences were forthcoming when the interview data for white and Negro subjects were compared. Analysis of level of aspiration data indicated that Negro subjects were much more pessimistic than white subjects at the beginning of the program, but that they became almost uniformly optimistic or realistic by the end of the program, while the white subjects changed very little. It was observed that the correlations of such basic status measures as IQ or the Vineland with employability were much higher for whites than for Negroes. Only the Purdue predicted equally well for both. Comparative multiple regression and factor analyses were calculated for the white and Negro subjects and these revealed additional differences between the two groups. It was pointed out that in this study, race and social class are consistently confounded. These results were interpreted in terms of their implications for special education and vocational rehabilitation.

Self-Concept

It was observed that different methods for measuring the self-conceptions of the subjects bore very low intercorrelations with each other. When Negro and white intercorrelation matrices were examined separately distinct patterns seemed to emerge, with self-concept variables correlating positively with employability for Negroes and negatively for whites. Inspection of the self-concept patterns for all subjects revealed a series of distinct patterns relating quite systematically to employability and race. Negro subjects tended to manifest either consistently high self-concept patterns, or a pattern where the self-report was low, while the actual aspirations were high. White subjects, in contrast, tended to be either consistently low in self-concept, or most often, to manifest positive feelings about themselves on self-report measures but negative feelings on the aspiration measures. A number of other characteristics of these patterns were explored and the distinctive differences were related to other findings in the study.

Follow-Up

A follow-up of the subjects of this study was conducted in July 1967, five years after the initiation of the program. Thirty-three of the original 55 subjects were reached at this time. Twenty-three of the 33 seemed at the time to be making reasonably successful vocational or educational adjustments. When the relationship between rated employability in the program, as measured by high or low employability status, and actual successful or unsuccessful adjustment in 1967 was calculated, the resulting prediction was found to be significant at less than the .03 level ($X^2 = 4.85$, df = 1). Thus, it was demonstrated that the diagnostic assessment index of employability was a valid predictor of subsequent vocational or educational adjustment.

Conclusions and Implications

A number of conclusions can be drawn from the findings of this study. A workshop-centered rehabilitation program begun at age 14 did not appear to accelerate or improve the vocational development of experimental group subjects when compared to their control group counterparts. This may have been because the characteristics comprising employability are already too well developed at age 14 to allow for major modification. It is considered more likely, however, that different patterns of treatment might have resulted in more clearly identifiable gains for the experimental group. In addition, it was suggested that the control group was, in fact, a kind of experimental group itself; the difference in services between the two groups may not have been great enough to lead to differential growth rates.

In this study the process of vocational development was observed to be intimately bound up with the development of a whole host of other characteristics. The direct measures of vocational competence, diagnostic ratings and production, consistently covaried with measures of intelligence, social maturity and manual dexterity. Vocational characteristics also covaried systematically with self-concept variables, but in different directions for white and Negro subjects. These findings lead us to conclude that there is a uniformity about the process of development, in that deficits in one area are generally reflected in deficits in others, while growth in one area is most often paralleled by growth in others. It is also clear that the vocational development process is by no means uniform for all kinds of individuals. Characteristically different patterns of vocational development, with concomitantly different kinds of problems, characterize the vocational growth of different subgroups.

It is clear that the environment from which handicapped adolescents come is a major determinant of their vocational development. We have seen that there is no monolithic relationship between the apparent degree of advantage provided by an environment and the vocational progress of the youngsters from that setting. Instead, the environment exerts its influence in a highly complex manner, which results in ostensibly the 'same' environment affecting different kinds of individuals in dramatically different ways. On the basis of the findings of this study, we are led to conclude that the same middle-class environment that so often produces excellence in the average and above average individual may be actually crippling to the growth of the below average youngster.

The contrast between lower-class Negro and middle-class white subjects was very salient in this study. It appears that the same measures of intellectual development are not equally valid for the prediction of employability for Negro and white subjects. Continued use of general aptitude-like tests for the screening of Negro subjects for employability appears to be contraindicated. A far better predictor will be a test such as the Purdue Pegboard, where the effects of past cultural differences will be less apparent while current motor learning ability and motivation will be appropriately reflected.

Level of aspiration patterns are characteristically different for high and low employability subjects. The highly employable subject is moderately optimistic about his productive capacities, while the individual low in employability tends either to be overly optimistic or inordinately pessimistic. Either of these latter two patterns are likely to lead to a compounding of the low employability subject's already serious vocational problems. Furthermore, the high employability subject appears to be more sensitive to his own patterns of success and failure than does the low employability subject.

The self-concepts of handicapped adolescents are very relevant to their vocational development. However, a distinction must be made between self-report measures of self-concept and measures based upon the observed goal-setting behavior of subjects. In order to assure that appropriate inferences are made concerning the self-concepts of individuals, it is necessary to use both self-report and aspiration-type measures so that patterns of self-concept can be examined for the subjects in a study.

It is possible to make accurate predictions of the employment success of mentally handicapped individuals on the basis of a diagnostic assessment of their vocational development early in adolescence. Errors of prediction almost always involve the early misclassification of subsequently employed subjects as unemployable, rather than the erroneous classification of unemployable subjects as employable. That is, the major prediction problem involves distinguishing between those apparently incompetent individuals who can succeed in employment and those whose incompetence is such as to preclude their successful vocational adjustment.

Finally, this study has demonstrated the advantages of a cooperative research and service effort involving both a university and a service agency. Facilitating the partnership was the fact that the university had a long history of and commitment to service in the community, while the service agency had an equally distinguished tradition of innovation and research activity. Nevertheless, the joint effort resulted in a compounding of the effectiveness of both these aspects of the program without the attenuation of either. It is clearly possible to conduct research which is relevant to questions of behavioral science theory in the context of an ongoing service program without the need to compromise the standards of either.

References

Atkinson, J. W. The mainsprings of achievement-oriented activity. In J. D. Krumboltz, (Ed.), *Learning and the educational process*. Chicago: Rand McNally and Company, 1965.

Benton, A. L. Psychological evaluation and differential diagnosis. In H. A. Stevens and R. Heber, (Eds.), *Mental retardation: A review of research*. Chicago: The University of Chicago Press, 1964.

Bloom, B. S. *Stability and change in human characteristics*. New York: John Wiley, 1964.

Bobroff, A. Economic adjustment of 121 adults formerly students in classes for mental retardates. *American Journal of Mental Deficiency*, 1956, *60*: 525-35.

Boly, L. F., and Cassell, J. R. An exploratory on-the-job training program for the institutionally mentally retarded. *American Journal of Mental Deficiency*, 1956, 105-112.

Brookover, W. B., Erickson, E. L., and Joiner, L. M. *Self-concept of ability and school achievement, III*. Final Report of Cooperative Research Project No. 2831. Michigan State University, East Lansing, 1967.

Bruner, J. S., Goodnow, Jacqueline J., and Austin, G. A. *A study of thinking*. New York: John Wiley, 1956.

Campbell, D. T. From description to experimentation: Interpreting trends as quasi-experiments. In C. W. Harris (Ed.), *Problems in measuring change*. Madison: University of Wisconsin Press, 1963.

Campbell, D. T. and Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, *56*; 81-105; March, 1959.

Collman, R. D. and Newlyn, D. Employment success of educable subnormal ex-pupils in England. *American Journal of Mental Deficiency*, 1956, *60*: 733-743.

Combs, A. and Snygg, D. *Individual behavior* (Rev. Ed.), New York: Harper, 1959.

Doll, E. A. Workshops in occupational educational programs for the mentally retarded. Reprinted from *Exceptional Children*, 1958, 25, No. 1 and 2, September and October, pp. 1-2, 51-53, 76.

Edwards, W. The theory of decision making. Psychological Bulletin, 1954, 51, 380-417.

Erikson, E. H. Childhood and society. New York: W. W. Norton and Company, 1950.

Festinger, L. A theory of cognitive dissonance. Palo Alto, Calif.: Stanford University Press, 1957.

Gallagher, J. J. Tutoring of brain-injured mentally retarded children. Springfield, Illinois: C. C. Thomas, 1960.

Gellman, W., Gendel, H., Glaser, M., Friedman, B., and Neff, W. S. Adjusting people to work. Jewish Vocational Service Monograph, No. 1, Second Edition, 1957.

Getzels, J. W. and Walsh, J. J. The method of paired direct and projective questionnaires in the study of attitude structure and socialization. Psychological Monographs, 1958, 72, 1.

Goldstein, H. Social and occupational adjustment. In H. A. Stevens and R. Heber, (Eds.), Mental retardation: A review of research. Chicago: The University of Chicago Press, 1964.

Goldstein, H., and Heber, R. F. Summary of the conference, in U. S. Dept. of Health, Education, and Welfare, Preparation of mentally retarded youth for gainful employment. Washington: Government Printing Office, 1959.

Goldstein, H., Moss, J. W., and Jordan, Laura J. The efficacy of special class training on the development of mentally retarded children. Cooperative Research Project No. 619. Institute for Research on Exceptional Children, University of Illinois, Urbana, Illinois, 1965.

Guthrie, G. M. Patterns of self-attitudes of retardates. American Journal of Mental Deficiency, 65, January, 1961.

Heber, R. F. Personality. In H. A. Stevens and R. F. Heber (Eds.), Mental retardation: A review of research. Chicago: The University of Chicago Press, 1964.

Illinois Commission on Mental Retardation, Report of the commission, Springfield, Illinois, State of Illinois, 1958.

Jensen, A. R. Social class, race, and genetics: Implications for education. Invited address to the annual meeting of the American Educational Research Association, New York City, February, 1967.

Kirk, S. A. Vocational rehabilitation: An educator's critique on past, present and future programs. In Vocational training and rehabilitation of exceptional children. Proceedings of conference of Woods Schools for exceptional children, Langhorne, Pennsylvania, The School, 1957.

Kirk, S. A. Early education of the mentally retarded. University of Illinois Press, 1958.

Kirk, S. A. Social, psychological and educational aspects of mental retardation. In Rehabilitation and research in retardation. Proceedings of a conference on the vocational rehabilitation of the mentally retarded. Southern Methodist University, Dallas, 1960.

Lewin, K., Dembo, Tamara, Festinger, L., and Sears, Pauline S. Level of aspiration. In J. McV. Hunt (ed.), Personality and the behavior disorders. Vol. I. New York: Ronald Press, 1944.

McClelland, D. C., Atkinson, J. W., Clark, R. A., and Lowell, E. L. The achievement motive. New York: Appleton-Century-Crofts, 1953.

McIntosh, W. J. Follow-up study of one thousand non-academic boys. Journal of Exceptional Children, March, 1949, 15, 166-170.

MacLeod, R. B. Phenomenology: A challenge to experimental psychology. In T. W. Wann, (Ed.), Behaviorism and phenomenology. Chicago: University of Chicago Press, 1964.

Michal-Smith, H. Study of personal characteristics desirable for vocational success of mentally deficient. American Journal of Mental Deficiency, 1950, 55, 152.

O. S. S. Assessment Staff. Assessment of men. New York: Rinehart, 1948.

O'Connor, N. and Tizard, J. The social problem of mental deficiency. London: Pergamon Press, 1956.

Sarason, S. B., and Gladwin, T. Psychological and cultural problems in mental subnormality. In R. L. Masland, S. B. Sarason, and T. Gladwin, Mental subnormality. Biological, psychological and cultural factors, pp. 145-400. New York: Basic Books, 1958.

Sears, Pauline S. Levels of aspiration in academically successful and unsuccessful children. Journal of Abnormal and Social Psychology, 1940, 35, 498-536.

Skinner, B. F. Behaviorism as a philosophy of psychology. In T. W. Wann, (Ed.), Behaviorism and phenomenology. Chicago: University of Chicago Press, 1964.

Wallach, M. A. and Kogan, N. Modes of thinking in young children. New York: Holt, Rinehart and Winston, 1965.

Wellman, Beth L. The meaning of environment. In National Society for the Study of Education, The Thirty-Ninth Yearbook, Public School Publishing Company, Bloomington, Illinois, 1940, Part I.

White, R. W. Competence and the psychosexual stages of development, in Nebraska symposium on motivation. Lincoln, Nebraska: Univ. of Nebraska Press, 1960.

Wylie, Ruth. The self concept: A critical survey of pertinent research literature. Lincoln: University of Nebraska Press, 1961.

APPENDICES A-G

APPENDIX A

DIAGNOSTIC RATING SCALE

VOCATIONAL DEVELOPMENT CENTER

CLIENT ______________________ ASSESSOR ______________________

DATE ______________________ DAY IN SHOP (Circle) 1 2 3 4 5

DIRECTIONS. Circle the number on the continuum that reflects most accurately your assessment of the subject for that item.

1 (When appropriate, on days 2, 3, 4, and 5): Reaction to change of jobs.

1 2 3 4 5 6 7 8 9 10 11

Positive reaction, shows enthusiastic interest, no complaints	Is resistant and angry with change, will not work

2. Appearance (shoes tied, clothes neat, person and clothing clean, clothing appropriate).

1 2 3 4 5 6 7 8 9 10 11

Acceptable in all areas	Unacceptable in all areas

3. Punctuality at beginning of work and at break.

Present ______ Time Arrived ______ Break ______ If late, how late? ______

4. Level of anxiety manifested toward foreman and work.

1 2 3 4 5 6 7 8 9 10 11

Completely at ease, no anxiety manifested	Extremely anxious manifests great fear

5. Effect of anxiety upon work performance.

1 2 3 4 5 6 7 8 9 10 11

Anxiety that is manifest never interferes with work	Anxiety that is manifest paralyzes worker and prevents work effectiveness

6. Comprehension and/or carrying out of instructions: Repetitions and supervision required for retaining and incorporating instructions into performance.

1 2 3 4 5 6 7 8 9 10 11

Does not need attention or supervision in order to retain and incorporate instructions; learns quickly	Cannot retain and incorporate instructions even with close supervision

7. Organization of work method.

1 2 3 4 5 6 7 8 9 10 11

. Follows orderly, well-organized work method to accomplish task; work area neat	Always becomes very slovenly and disorganized .

8. Rhythm and coordination.

1 2 3 4 5 6 7 8 9 10 11

. Works with a steady, well coordinated rhythm	Works in unsteady, poorly coordinated fits and starts .

9. Accuracy and/or quality of work.

1 2 3 4 5 6 7 8 9 10 11

. Always excellent	Always poor .

10. Response to own poor performance (or poor quality of own work).

1 2 3 4 5 6 7 8 9 10 11

. Client always recognizes his own mistakes and reacts appropriately. If necessary, can learn from performance examples set by co-workers	Frequently makes gross errors and shows no awareness of them. Does not learn from performance example set by co-workers .

11. Calmness during work period.

1 2 3 4 5 6 7 8 9 10 11

. Calm during entire period. Behavior never presents problem to staff or workers	Very unsettled during entire work period. Behavior a constant problem to staff and workers .

12. Odd or inappropriate behavior (verbalizations, gestures, mannerisms, actions, etc.)

1 2 3 4 5 6 7 8 9 10 11

. Appropriate behavior manifested	Bizarre behavior manifested .

13. Complaints about self-inadequacies or illnesses.

1 2 3 4 5 6 7 8 9 10 11

. Never voices complaints	Continually complains .

14. Client's requests for assistance or attention from foreman.

1 2 3 4 5 6 7 8 9 10 11

. Requests are always appropriate	Requests always inappropriate, demanding, unnecessary, loud .

15. Complaints about co-workers, foremen, or tasks.

1 2 3 4 5 6 7 8 9 10 11

. Never voices any complaints	Voices complaints frequently and unjustifiably .

16. Initiative in seeking out new methods, helping others, and seeking more work.

1 2 3 4 5 6 7 8 9 10 11

. Consistently displays initiative	Never displays initiative .

17. Amount of activity directed toward social contact during work period.

1 2 3 4 5 6 7 8 9 10 11

. No activity during work period directed toward social contacts, unless in relation to work	All activity during work period directed toward social contacts .

18. Effectiveness of social contacts with peers.

1 2 3 4 5 6 7 8 9 10 11

. Leader in group	Social isolate .

19. Reactions to pressure originating in work group.

1 2 3 4 5 6 7 8 9 10 11

. Reacts positively to group pressure, production increases, disposition remains good	Reacts negatively pressure, production decreases, disposition becomes poorer .

20. Ability to communicate thoughts and feelings.

1 2 3 4 5 6 7 8 9 10 11

. Communicates both thoughts and feelings clearly and consistently. Speech is appropriate and understandable	Great difficulty in communicating even the simplest thoughts and feelings. Speech unintelligible .

21. Ability to accept criticism and/or control from foreman.

1 2 3 4 5 6 7 8 9 10 11

. Accepts criticism and control; corrects mistakes; performance improves

Responds emotionally to criticism; performance regresses .

22. Reaction to supervisory pressure for increased production.

1 2 3 4 5 6 7 8 9 10 11

. Increases output under pressure and sustains increase

Output decreases .

23. Reaction to supervisory change of work procedure or directions.

1 2 3 4 5 6 7 8 9 10 11

. Easily adopts new methods and sustains them. No manifest resentment of foreman interference

Cannot adopt new methods. Overt resistance to change .

24. Inappropriate personalization of client's relationship with foreman (attempting to act as though foreman were a family member, buddy, etc.)

1 2 3 4 5 6 7 8 9 10 11

. Never manifested

Always manifested .

25. Acceptability of client's role as a worker.

1 2 3 4 5 6 7 8 9 10 11

. Client takes a role as a worker which is completely acceptable in the work situation

Client takes a role which is completely unacceptable in the work situation .

26. Response to support and/or praise from foreman.

1 2 3 4 5 6 7 8 9 10 11

. Responds positively to praise; smiles, thanks foreman, lights up, and work tempo increases

Responds negatively to praise; frowns, sarcastic comments; work does not improve. Denies compliments .

APPENDIX B

In this Appendix, we have reproduced the manual developed for the interviews in this project. In all cases, the text on the left-hand page contains the kinds of questions to be asked by the interviewer. The small letters (a, b, . . .) refer the reader to explanatory theoretical notes on the right-hand pages. These theoretical notes are always on right-hand pages.

APPENDIX B

HANDICAPPED TEENAGE WORKSHOP

OUTLINE FOR INTAKE INTERVIEW SCHEDULE FOR BOTH EXPERIMENTAL AND CONTROL GROUPS

I. SOCIAL HISTORY

A. Family Constellation

Full description of all members of family and their ages. Indication of whether present mother and father are married to each other for the first time. If this is not the first marriage for either of them, indication of how many previous marriages there have been, and which children are from which marriages.[a] What are the salient characteristics, intellectually and emotionally, of the other family members? Here what is desired are indications of mental retardation, or intellectual excellence, in other members of the family, and any indications of emotional disturbance in any other members of the family.[b] With which of the siblings does the client interact the most. What is the nature of this interaction? Does the client play the role of the leader, the follower? Is it a fighting relationship? In general, what is the pattern of influence between the client and his siblings?[c] With which parent is the client closest? If possible, attempt to tap the nature of the relationships between the client and each of his parents.[d]

B. Physical Conditions of Home

Does the client have his own room or is the room shared with someone else? If shared, with whom is it shared? What are the opportunities for privacy for the client in the home? Does the client have any private property of his own? If so, what? Does he have his own radio, own television set, his own books, games, toys--what are these?[e]

HANDICAPPED TEENAGE WORKSHOP

THEORETICAL NOTES

I. SOCIAL HISTORY

A. Family Constellation

(a) There appears to be a very substantial relationship between the kinds of things that go on in the family and the kind of worker that the client becomes. The question of what the family constellation looks like gives us a picture of that environment within which the client functions for the greatest percentage of his time. The important question is: are there both a mother and father in the family? We have found many cases where there is either only a mother, or where the mother has remarried and there is a great deal of conflict centered around the new father. The stability of any environment is very important. It must be consistent so that the child can learn that there are factors around him that he can depend upon. Without knowing that there is a consistency and stability around him that he can depend upon, it is difficult for him to move forward and develop new skills and try new things. If even the identity of one of his parents is not stable, i.e., if his mother has married and remarried, then it is all the more difficult for him to adjust to new things such as work.

(b) There may be some case for hereditary incidents of intellectual and emotional disturbance, and any knowledge of such disturbances in other members of the family is useful here. From the point of view of the environment, the degree of emotional disturbance in other members of the family contributes to the general instability of the family and home environment, thus making it more difficult for the client to develop basic trust in his primary group relationships. Also, since we believe that one of the major steps in the development of a vocational identity is identifying with someone who does work, the existence of retardation or emotional disturbance in sufficient quantities to impair working ability would hinder the prospects of the individual's making a work syntonic identification.

(c) We are convinced that there is a substantial relationship between the individual's ability to interact socially and his ability to work. The first opportunities to interact socially with other than the parents are interactions with the siblings. We wish to know as much as possible about the manner in which the client interacts with his siblings in order to get some notion of the kinds of interactions he is likely to have with peers. We want to know whether in the family the client has become accustomed to being the youngest, and thus to be babied, or to be set upon; whether he is accustomed to being the oldest and, for this reason, generally either the one given most responsibility or the one who expects to be the bully and the boss. If he has been greatly influenced by one of his siblings, who may in some ways have taken the identificatory place of one of the parents, we wish to know about this so that we can get some notion as to the dynamics of the identification process with this client.

(d) Our goal here is to detect the identification patterns with the parents and to attempt to get some notion of which parent it is who is most likely to have provided or will provide the model that this client will attempt to emulate.

B. Physical Conditions of Home

(e) All these items are attempts to assess the opportunities of the individual in his home environment for the developing of individual initiative and autonomy. If our first questions were attempting to elicit in some way the nature of the relationships between the client and his parents and siblings, so that in Erikson's terms we could get a picture of the development of basic trust in his environment, here we are interested in the opportunities for his development of personal initiative and autonomy. Is he allowed to be an individual with individual interests, self-directed, and possessing personal privacy? To the extent that he has these things, he may be able to come out from under a very dependent relationship with his parents and be more prepared to function effectively on his own as a worker and as a mature adult.

What is the family's geographical history; i.e., where have they lived since the client has been born? Does the pattern appear to be one of constant change, or does there appear to be a fairly stable residential history?[a]

C. Family Work History

What has been the work experience of the parents of the client and, if any, the siblings of the client? What jobs? How long have these jobs been held? What position was held? What kind of responsibility? And, were these full- or part-time jobs?[b]

D. Education of Parents and Siblings

How many years of formal education did each of the parents receive? What degrees, if any, or diplomas were received? How many years of education have each of the siblings received? If it is possible to assess this, how well did both parents and siblings do in school, or how well are they now presently doing in school? Where did the education take place?[c]

E. Salient Medical or Emotional Characteristics of Family Members

Here we are asking in a more detailed way than we did under I-A, what is the important medical history of the other family members? Are either the parents suffering from a chronic medical problem which requires constant care? How about any of the sibs, and this would include things such as heart problems, anemia, epilepsy, mental retardation, apparent emotional disturbance, etc.[d]

(a) Here again, the keynote is stability. Does the family remain in one place so as to afford the client the opportunity to develop lasting relationships with teachers, peers, neighborhood institutions, and, in general, to become sure of himself in the physical and human environment? If this opportunity does not present itself, the child will never have been able to experience the satisfaction of lasting relationships of dependable environmental situations and thus may not ever have experienced the satisfaction of his social and his achievement needs.

C. Family Work History

(b) If a person has a history of successful work, the probability is high that he will be successful at work in the future. If he has been brought up in a situation where work has been a central factor, where the people in the situation have been effective at work, he will have learned the value of work as something that he should strive for. If the client has identified strongly with the parents or one of his older siblings, the extent to which they have valued work by doing well at it and maintaining work positions may have had a great influence upon his valuing of work.

D. Education of Parents and Siblings

(c) Whatever the client can accomplish educationally will probably aid him in any work he does. Whatever his parents have accomplished educationally may give us some index of the amount of sensitivity to the client's problem we can expect, and also an indication of the valuing of education in general in the family. How well any older siblings have done in school or how long they have lasted may in some ways be the best single predictor of how well the client will do and how long he will last.

E. Salient Medical or Emotional Characteristics of Family Members

(d) This is another aspect of the primary group environment which we believe is relevant to the client's development. It also may suggest some congenital predispositions toward certain illnesses or states which the client may possess. A chronically ill parent is not a parent who is generally a strong identificatory figure. The parent's illness may have resulted in the client's assuming a great deal of domestic responsibility and this could feed in to his autonomy, independence, and eventual vocational employability. On the other hand, it may indicate to the client that you can be very important, i.e., a parent, while not being able to work. It could serve to motivate the client to learn to work so that he can make money and care for an ailing parent or sibling, or it may motivate the client to work in order to get out of the house because the home environment is so trying with an ailing parent. Thus, the situation by no means suggests only one kind of consequence.

F.

The parents are to be asked if they can think of any reason, any cause that they know of, for their child's present problems. What do they perceive as their child's major problems? Can they remember any time in particular which they can see as the starting point in the development of the specific problems which the child is facing now, or the general problems state the child is always in? Or, if they can't spot a starting point, do they see any previous incident in the child's life that is somehow the crisis or critical moment which either led to the development of the problems or was a major indication that a problem existed?[a] Do they think that anything can be done to help their child? What do they really expect their child's problems to lead to, and what is the most they can hope for?[b]

II. PEER GROUP ASSOCIATIONS

A.

Does the client have any friends? Are they the same age? Are they older? Are they younger? What role does the client generally play in these friendships--that of a leader? A follower? Does this fluctuate? Do his friends tend to be of the same sex? Are they usually of the opposite sex? Both?[c] Does the client have a steady group of friends or is he constantly involved in changing or shifting relationships? If these relationships are constantly shifting, is the termination of previous relationships amicable, or is there usually much pain and frustration involved whenever an old friendship is terminated? Who initiates friendships between the client and others, and who initiates the terminations as the client and parents perceive it?[d] When the client speaks positively of his friends, what characteristics of themselves

F.

(a) There exists in almost every family that we have come in contact with some story, be it true or folklore, which is an explanation (a rational explanation) for the handicap of their child. Often as not, it is strictly in the realm of fantasy. A nurse or maid or the mother dropping the child on its head when the child was very young; an automobile accident the child was in, where it received a head injury; the trauma of seeing someone die, either a parent or sibling or relative; and probably the most frequent of the folklores of parents of EMH children is that the trouble started when the child was put in special classes with all those "stupid kids" and "how could he learn anything else but to be stupid." Most parents have some sort of developmental theory of their child's handicap, and it offers us much deeper insights into the dynamics of the parents if we can learn this theory from them. Also, this theory may be correct; and if there is a critical incident or specific experience from which all the consequent difficulties can be traced, then it will be very important to work with this in counseling and in other areas, if it is psychological, or to recognize its existence and treat the child accordingly, if it is physiological. It is also important to see how the parents perceive the child's major problem. What is it that the child needs help with? Some parents with severely mentally retarded children will simply say that their children need a little push. They need to be motivated. Others see the handicap as being almost fated, so that nothing much can really be done. It is important to know whether the parents view the child's major problems as intellectual, social, vocational, or emotional, or even in fact, if the problem rests not really with their child but in the school authorities who simply do not appreciate the child's worth. All this is important, because so often the child's perception of his problem and its development reflects directly the perception of his parents, which they have communicated to him over the many years.

(b) The parents' general aspirations for the child may give us some insight into the kinds of things that we do that will be reinforced by the parents, and the kinds of things that we do and say to the client that will meet with resistance from the parents. Also, realistic parents will probably have a more realistic child; parents who are living in a fantasy world of hopes and dreams may have a child with the same kinds of hopes and unfounded dreams.

II. PEER GROUP ASSOCIATIONS

(c) The kinds of habitual interactions that the client has with his peers can give us some indication of the social behavior that can be expected of the client in the workshop. Clients tend to bring their habitual social roles over from the street or playground into the shop, and this will be reflected in the way they act toward peers and toward foreman in the shop. The question of whether the client has any friends is important because, if he has none, then among the possible consequences are complete withdrawness (because he is unable to know what to do when with a group of children his own age) or simply inappropriate behavior socially (because he has never experienced through trial and error and learned the correct way of relating to peers). The age of the peers that the client plays with gives us some indication of the level of maturity of peers that the client feels most comfortable with. Many of our clients tend to play with much younger children and exercise leadership in this respect because they are simply so much bigger. He could, on the other hand, generally play with other mentally retarded children. He could play with same-age children of normal intelligence and act as the group flunkey. As an adolescent we are interested in knowing whether he has begun to develop relationships with members of the opposite sex. The boy-girl relationships in the shop can be very tension-producing and can interfere with work, especially if they are an area of great anxiety for the client.

(d) Here, the notion of stability is carried on into peer relationships, with the major assumption being that long-lasting relationships will tend to develop in the client feelings of trust and confidence in peers and will ease his development of subsequent friendships in the shop; that constantly fluctuating relationships that are terminated painfully will have a tendency to make difficult the development of new relationships and may even elicit hostility from the client when faced with new acquaintances.

their behavior, their backgrounds, their habits, does he stress? And when he speaks critically of his friends, or former friends or enemies, what characteristics of them does he stress?[a] What is the client's self-perception socially? Does he perceive himself as being popular? Does he perceive himself as being lonely? If it is one of loneliness, to what does the client attribute the loneliness? Why don't other children want to play with him?[b]

B.

Does the client belong to any formal groups, such as Boy Scouts, Girl Scouts, Jewish Big Sisters, Boys' Club, synagogue group, church group? How long has he belonged in the group? How does the client feel about the group? If there is a history of previous group membership, although it no longer exists, try to get this history and find out what led to termination.[c] Does the client have any camping experience, either of the overnight camping or of the daycamping variety? If so, what camps, where are they located, and, if possible, what is the name of the director?[d] Try to explore whether the picture that is presented about this client's peer group associations represents a longstanding pattern, whether it represents an improving pattern over the past, or whether it may represent a disintegration or a decline in the success the individual is having with peer group relations. Ask about friendships from earlier days. How long he has known his oldest friend or best friend--questions such as these.[e]

(a) Here, we will get some notion of the social standards by which he judges himself and others. What makes a person a good friend and what makes a person a poor friend or an enemy. We wish to gain insight into the kinds of needs that the person desires to satisfy when he develops a social relationship. It may be a need to be led. It may be a need to dominate. It may be a need to be laughed at or to have someone to laugh at himself. An understanding of these feelings on the part of the client would give us greater insight into the potential problems that might develop between this client and fellow workers and between the client and the foreman.

(b) This is the first item that deals pretty much directly with the client's self-concept in a certain area. Here, it is his social self-concept. Most of our clients perceive themselves as being quite lonely. In general, we wish to get an insight into how the client perceives the reactions others have to him socially and how he can explain the dynamics of these reactions. It is very likely that the kinds of reactions he may tend to attribute to others are an indication of the kinds of reactions he in fact has toward himself. To the extent that these reactions are seen as being generally positive and complimentary, to this extent the client may see himself in this light. If, on the other hand, his perception of others' evaluations of him is very disparaging, we may have here a very self-deprecatory case--a feeling which will obstruct vocational development--because he will never believe that anyone could expect him to be worth anything or to be liked.

(c) These are indications of previous experiences with structured, institutional social and work groups, and how well he did in them may be an indication of how well he does in such groups, ours being one not unlike those. We can also write to these groups and try to find out something about the nature of his participation with them.

(d) Camps often keep evaluations of their campers and their records. We might want to see the camping evaluations that this client has, if he has been at camp.

(e) Here, we are trying to get a longitudinal picture of the peer group relationships of this client. What is the long-range view? Have things been getting better as he sees it? Have things been getting worse? Are things pretty much the way they have always been? One reason we ask this is that we want to know and to be able to assess to what extent these patterns are very, very stable, or to what extent they are new and thus more amenable to change.

III. MAJOR AVOCATIONS

A.

What are the client's favorite hobbies, if any, and if the client mentions hobbies, how long has he had the hobby and approximately how much time per day or per week or per month does the client spend engaged in his hobby?[a] What are the client's major interests--sports, games, reading, this sort of thing? Try to get the client to talk as much as possible about these interests.[b]

IV. FULL MEDICAL HISTORY

A.

What is the name of the client's family doctor? What are the names of any and all doctors whose care the client is presently or has been recently under. To whom can we write in order to get a full, complete medical history on this client that would be as extensive and reach as far back as possible?[c] From the parent we must know: has the client ever been seriously ill or been involved in a serious accident, or shock, or possible trauma. Involved here are anything from rheumatic heart to automobile accident, to the death of a parent, a sibling, or close friend.[d] Finally, is the client presently either taking or supposed to be taking any medication for any present ailment. If so, what is the medication, how much of it and how often does he take it?[e]

What is the client's attitude toward his own body as characterized by his statements about his health, his strength, his looks, his running and playing ability? Does the client consider himself a well-made,

III. MAJOR AVOCATIONS

(a) Those activities which an individual engages in out of his own volition can often be good indications of the kinds of goals that motivate him to act autonomously. Also, and this is pure speculation, it is conceivable that in some of the standard kinds of hobbies, such as stamp collecting, coin collecting, baseball playing card collecting, there is an extensive compulsive component which could be built upon in the shop in the form of motivation to do the repetitive, orderly kinds of tasks that are so often appropriate for clients of the intellectual ability of most of ours. There is a certain degree of frustration tolerance necessary for different kinds of hobbies. For example, in building intricate model airplanes or model automobiles, or in building ships to put into bottles, there is necessary the ability of the individual to forego immediate closure and engage in activities that bring no immediate satisfaction in order to get the greater aesthetic satisfaction in the long run. A client's ability to become interested in these kinds of things and for the interest to be reflected in consistent (such as daily) engagement in his hobby, could be a good indication that we already have a groundwork upon which to build the necessary attitudes for successful employability.

If, on the other hand, the client is completely devoid of any hobbies or interests in which he engages for any reasonable length of time regularly, it could be a reflection of a lack of developed frustration tolerance or ability to attend to any one task with any degree of regularity, a lack of self-motivated, autonomous behavior, and conceivably a poorer bet for eventual employability through the workshop.

(b) This is closely related to the previous note. What we are also getting at here, though, are the client's general tendencies to be either sedentary or engage preferably in some degree of physical activity; his propensity toward individual or group activities; his desire for intellectual or physical activities; his desire for active or passive activities; etc. From the practical point of view of simply working with the client in the shop, we have also often found that it is through insights into the client's major fields of interests or hobbies that the foremen and counselors can make their first really firm contact with the client. This is another reason why the information covered under notes (a) and (b) can be of crucial importance.

IV. FULL MEDICAL HISTORY

(c) This is important because emergencies can arise on the job for which we would possibly need the client's doctor's advice immediately, and also because we do want to know all we can about the physical development of the child. Certain aspects of a medical history could indicate that it is unwise to direct a child toward one area of vocation.

For example, medical conditions in the client which would preclude his engaging in heavy physical labor would be more than ample reason not to reinforce a male client's propensity toward going into the construction business. In general, there are also many times when aspects of the medical history would serve to give us a clearer insight into kinds of behaviors that are manifested by the client now which are not understandable without knowledge of the previous medical history.

(d) Critical incidents of these sorts are often important determinants of later development. We wish to know about them ahead of time in case they should come up in counseling or, more generally, because we may be able to gain insights as to the causes of the client's behavior through understanding what some of these critical incidents were. For example, a mother who brings in a child who is mentally retarded and believes that the retardation is probably because of brain damage at birth, may also tell us when we ask about these major incidents in the child's life that the child never really began to fall behind in school and need special classes until, let us say, fourth grade; and when we delve further we may find that it is about the same time the child was in fourth grade that the father was either divorced or died, or that some other major incident took place within which the child was involved.

(e) Knowledge of the medication the child may be taking is important both so that we can have a better understanding of the reasons for certain kinds of behavior, such as possibly lethargic behavior which could be misinterpreted if we did not know that a client were taking phenobarbital in order to help to control an epileptic condition; and also so that if something serious should happen in the shop and emergency medical treatment were called for, we would know under what medication the child already was, if the doctor would need this information.

presentable individual, or is there great anxiety and shame associated with his body image? Does he think he is as good looking as most other children his age? Does he play as well? Does he run as fast? Is he as strong? Is he as healthy?[a]

V. EDUCATIONAL BACKGROUND

A. What is the Client's Educational History? How Long Has He Been in Special Classes

What is the client's perception of and evaluation of his position in "special classes"? Is he happy in special classes? Is he unhappy? Does he ever recall being in regular classes? What did he think of regular classes? How does he compare them to the classes he is in now? What does he think it means to be in special classes? What does he think other people think of him because he is in special classes?[b] Who is the favorite teacher he's ever had? What is her name? What made her or him the favorite teacher? Who is the worst or most hated teacher he ever had and why does he think he hated or disliked her?[c] How far in school does he think he will go? Here we might tap the client's possible fantasies about high school or college, or, on the other hand, possible fantasies about quitting school immediately and finding a job. How far would he like to go if he had his choice?[d] And finally, instruction to the intake interviewer to make sure that all BCS reports and teacher ratings and achievement records are received as soon as possible.

(a) Here we have the other aspect of self-concept, which revolves around the client's own body image and personal conception of self. To a great extent, the manner in which a person perceives himself determines and directs the kinds of activites in which he will engage, the kinds of attitudes which he will hold, the kinds of aspirations which he will allow himself. Mentally handicapped clients will generally not be engaging in work which has a very large component of intellectual activity, but will probably be involved in work whose largest component is physical or manipulative. It is thus very important to know how the individual feels about his physical abilities, his physical limitations, his clumsiness or grace, his speed or slowness. The client's perception of his own attractiveness is also important because possessing a body image which revolves around ugliness and unattractiveness could conceivably be reason for the client to withdraw from interacting with other people, and it would be necessary to work on this body image before we could expect him to begin to interact well with people socially and thus to be able to work in a group situation. On the other hand, with a person who is physically very unattractive and even repulsive, but who does not recognize this, there may be resistance on his part to do things that would improve his acceptability to others because he would see no reason for this. For example, the immensely overweight girl who considers herself quite lovely and will therefore not seriously engage in a diet because she does not see herself as being ugly because of her overweight, but whose very overweight condition is one central reason why no employer would ever begin to consider her for a position. The client who considers himself very weak or basically an ill, sickly person will greatly delimit the kinds of activities in which he believes he can engage and may so delimit these activities as to almost rule out any kind of work for which he is appropriate. All these are aspects of self that are very work relevant and that are indispensable to the knowledge of the counselor and foremen if they are to work with the client.

V. EDUCATIONAL BACKGROUND

A. What is the Client's Educational History? How Long Has He Been in Special Classes

(b) Much of our clients' lives revolves around their school attendance, and all of this attendance is in special classes for the educable mentally handicapped. There are varying degrees of recognition among our clients of their placement in special classes and varying degrees of satisfaction with this special status. The degree of insight into the client's handicap which he himself possesses can be viewed through his demonstrated understanding or lack thereof of the reasons for which he is in special classes. The individual need hierarchy of the client can be seen from one vantage point in the answers to these questions by the kinds of statements he makes concerning his happiness or unhappiness with his classes. Some are happier than they were in regular classes because they are able to proceed at their own pace and thus, for the first time, feel they are learning something. They no longer feel pressed and hurried and unable to achieve. Others may be unhappy because all the other kids are so dumb or because they are treated like babies or because none of the boys are cute. All these reflect different needs and different kinds of understandings.

(c) Here we gain some view of the individual's expectations in non-parental authority figures who are training or teaching him. The foremen may also fall in this category. What makes this kind of authority figure good, and what makes this kind of authority figure bad? What kinds of needs does the client attempt to satisfy interacting with such an authority figure? What kind of behavior does he attempt to elicit? Under what conditions are these satisfied? Under what conditions are they not? For one client the same teacher may be good because "she was nice and let us do what we wanted"; for another, this same teacher may be bad because "we never got anything done." The client's expectations for these authority figures are important because of the fact that after the foreman the next parallel authority figure will be the boss. Expectations for authority figures that do not jibe with work attitudes and values will not contribute to eventual employability for any client.

(d) These are of use mainly to the counselor in working with the client's fantasies about education and work. These have run the full range from one girl who knew she could not even graduate grammar school but was going to, as soon as she was terminated from grammar school, become a high school teacher to the boy who wants to quit school tomorrow in order to go to work. We must remember at all times that fantasies are defense mechanisms, and we must look beyond any given fantasy to that against which the client is apparently defending with it. An understanding of these dynamics can aid us greatly in making a reasonable plan for the client involved.

VI. WORK BACKGROUND

A.

Has the client ever worked formally or informally? This would include, for example, babysitting. If so, how often? Have there been steady customers? What kinds of reactions has the client gotten? Any part-time jobs in stores in the neighborhood? Newspaper delivery?[a] How about chores around the house? What kinds of responsibilities does the client assume around the house, and are there any kinds of rewards or allowance that the client gets in reward for what he does? In general, what kinds of things does the child receive, either financial or emotional, reinforcement for? Chores around the house? Doing well at school? What kinds of activities are there for which he can receive financial reward in the sense of material achievement?[b] If he has done any formal work, how was it secured? Did he go out looking for it? Did it happen by chance? Did a parent, sibling or relative get it for him?[c] What, if any, kind of work is the client doing regularly or irregularly at this time?[d]

VII. VOCATIONAL GOALS

A.

There are essentially four permutations of the same question under this category. (1) What are the parents' personal goals for the client? What would they like him to be? (2) What do they perceive as being the client's own goals for himself? What do they think he would like to be? (3) What does the client say he would like to be? (4) What does the client think his parents would like him to be?[e]

VI. WORK BACKGROUND

(a) Under this heading of work background are included some of those factors which may be the most relevant non-workshop factors contributing to eventual employability. Attitudes toward work develop early and to a great extent out of experiences working. If the client has had experiences with work, it is more probably that he will work in the future. If the client's experiences with work have been positively reinforcing, then he will even more probably work successfully in the future. Most of our clients, when they first come to us, are too young to have had too extensive a work history. However, if they already have, this is a good sign.

(b) We believe that the developmental stage at which our efforts are most directed is characterized most aptly by Erikson's stage of industry vs. inferiority. We believe that as a prerequisite for developing a full, healthy identity, which includes a working component, it is necessary that the feeling of industry rather than that of inferiority have been built up in the first place. We believe that most handicapped teenagers have not developed the feeling of industry. In fact, most of their prior experiences have probably reinforced the notion in them that they are inferior, that they cannot achieve, that they cannot behave in a manner which is rewarded in our society. That aspect of the child's world in which he receives both positive and negative reinforcements most regularly and most formally, both at home and outside, is the area of school achievement. Children learn what it means to do well, to be industrious, to work effectively, within the framework of the school. It is just within this framework that EMH children have not succeeded and for which reason they are in special classes. The school activities, which Erikson stresses are the main sources of feelings of industry in the growing child, are not a source of industry but a source of feelings of inferiority for the mentally handicapped child. In these items we are investigating all the possible areas of life, both scholastic and non-scholastic, where the individual can receive reinforcement for personal achievement leading to a firm sense of personal industry, with an ability to achieve. To the extent that the client has the opportunities to have his feelings of industry reinforced, to that extent he is more on his way toward developing eventually a successful work identity. To the extent that it is rather his feelings of inferiority that are reinforced, to that extent we must undo much damage before we can build a feeling of industry into the individual in the workshop situation and thus prepare him to be a worker. Financial reward is our society's way of telling someone that he has done well, that he is approved of, that he can be proud of his accomplishments.

(c) Having done formal work in the past is even more significant if it was a result of the client's own initiative, and if it was outside the immediate family or relatives. To the extent that it tends to be something that either the family got for him or work just within the family, it has less of an effect. However, even work done within the family, if properly reinforced, can do much to further the subject's feelings of industry.

(d) We wish to know what kind of work, if any, the client is doing at the same time he is in the shop, for it would be pretentious on our parts to assume credit for certain kinds of improvement due to work if he is spending more hours a week working outside the shop than he is inside the shop. Also, if he is presently working regularly and a substantial number of hours a week, there is a question that our own workshop situation would do nothing but duplicate what he is already getting on his own. It is very conceivable that working on your own already is just as good, if not better, than the sheltered workshop situation for someone who can handle it.

VII. VOCATIONAL GOALS

(e) In studying aspirations one has for himself, aspirations parents have for their child, and each one's perceptions of the other's aspirations, we are looking to see if there is a consistent pattern of reinforcements within the family. We might view aspirations on a continuum from unrealistic through realistic to unnecessarily pessimistic. Some possible consequences here are as follows. If the parents have an unrealistically high aspiration for their child, and it is apparent the child cannot really accomplish anything near that, any attempt on our part to adjust the child to a less demanding vocational role would be met with by resistance on the parts of the parents. This is, in fact, the case with some of our middle-class parents, who cannot see their children operating in what are essentially vocational roles that are less than middle-class, but are the only roles for which the children are, in fact, prepared vocationally. Another combination is where the child has rather realistic aspirations, whereas the parents don't believe the child can do anything at all; and thus the parents reinforce the child's dependent and non-autonomous feelings, thus greatly decreasing the amount of influence the shop can have in getting the child to try to think on his own and toward more independent vocational goals. In general, to the extent that all these four permutations are somehow consistent, to that extent there is a more stable set of factors operating to influence the client. To the extent that these four permutations are not consistent, the environment of the client and his own needs may tend to be out of focus, and he may not be receiving the kind of stable support from the home that he needs in order to make his adjustment to the work situation.

In all of these, especially when either the parents are stating a perception of theirs regarding the client or vice versa, try to get some evidence as to the grounds on which they base their perception; i.e., why do you think your child wants to be this? Or, why do you think your parents want you to be a such-and-such? What makes you think that?[a]

VIII. IMPRESSIONS OF CLIENT

A. Physical Appearance

What does the client look like? It is suggested that we might even request a photograph of the client or take one at the intake interview. Does the client come well-dressed? What is the nature of the client's clothing? What is the nature of the client's personal appearance, neatness, attractiveness, or lack thereof? Does the client manifest any bizarre mannerisms, any disturbing or distracting salient physical deformities? Are there any salient verbal difficulties? Does the client stutter badly? Is there marked speech distortion? Twitching? Nervous tics? Great overweight problem? Anything like this.[b]

B. Describe the client's manner of reacting to the interview setting and, while doing this, try to view the interview setting as a novel problem that the client is attempting to deal with. What is the general level of anxiety that the client exhibits? Does it appear to be an appropriate anxiety? Does it appear to be inappropriately great or possibly inappropriately small? For this client in this situation, is the anxiety paralyzing or does he manage somehow to bind it and to act appropriately in the interview setting.[c] How well does he speak? Does he appear to

(a) Here we are looking at the lines of communication between the client and his parents, and the parents and their child. How are feelings communicated within this family? How do the parents and child make each other's feelings known to the other? If such feelings are made known explicitly and candidly and the people sit down and talk about these things, there is a better chance that the total situation is a healthier one. If, in fact, these are purely inferences and there is very little formal communication between the parents and the child, it is conceivable that the home environment does not present the optimum conditions. This is also important because there is often a great difference between what the person says he wants and the way he acts, communicating something completely different. If the parents say they want one thing for their child, but when we speak to the child, he believes they want something else, and when he describes the conditions which lead him to believe that they in fact want something else, it may become apparent that they themselves are ambivalent saying one thing and living another.

VIII. IMPRESSIONS OF CLIENT

(b) No matter how good a worker, an individual who is physically very distasteful will find it difficult to become employed with any regularity. A person who manifests very bizarre behaviors, who cannot speak at all or who speaks only at very rare moments, whose general communication faculties are impaired, will find it more difficult to work because he will be unable to interact well with foremen and fellow workers. It is very conceivable that as we attempt to develop the client's work attitudes, during the same period we may be required to attempt some correction of some of these other defects in order that at the end of the entire treatment process we have a more presentable worker.

(c) The client's ability to adjust and adapt himself to the interview situation as a new problem to be solved is probably a very good indication of the way he habitually reacts to other new situations that present problems to be solved. These will include the shop, when he comes to it, an eventual employment interview and, if hired, his initial days at work. In this sense, the manner in which the client reacts to the interview situation may be a very good predictor of his ability to handle such situations. Anxiety can be both completely paralyzing and can be just what an individual needs to motivate him to do his best. The research of Sarason and others on the effects of anxiety indicates this generally curvilinear effect of anxiety on productivity and general performance in a situation. The question here is: how much anxiety does this kind of novel situation elicit in a client and, given this anxiety, what are the effects of it on his behavior?

have to grope for words or do words come fairly easily to him? Does he answer clipped "yesses" and "nos" or does a reasonable question elicit a fairly lengthy and detailed answer?[a] Does the client give some indication of having a demonstrated insight into his handicap and into the need for help? Does he see himself as needing assistance? Does he look forward to it? Does he see it as something he will enjoy or as something that is necessary but painful, or even as something unnecessary that he's being forced to endure.[b] In general, when making an assessment of the behavioral impressions of the client leaves you, attempt to be on the lookout for extreme behavior--either intellectually or emotionally. If the child simply cannot respond appropriately to any question (even the simplest question), and there is a strong impression of such debilitating intellectual handicap or emotional involvement that communication is all but impossible in the setting, indicate this clearly.[c]

IX. IMPRESSIONS OF PARENT

A.

What is the general appearance that the parent presents, and what kind of impression does the intake interviewer have of the parent's intellectual and emotional development?[d] Also, some behavioral impressions of the kind of interaction that the parent and child have in the presence of the interviewer. Is it the parent who does all the talking and the child who retreats to the back of the room and kind of sits there, looking at the floor? Is it the child who appears to dominate the relationship and the parent who nods approval? Does there appear to be give-and-take here? Is there a hostility manifested? Is there great dependence manifested? Attempt somehow to

(a) The ability of any individual to communicate verbally with someone else is of extreme importance in any social or work situation. It is the way he expresses his desires, the way he expresses his misunderstandings, the way he communicates his discomforts or comforts, the general medium through which interactions take place between individuals. We have found that if some of our clients are very near totally unable to communicate verbally with another person, either because of their extreme withdrawnness or because of extreme speech defects, that they are generally incapable of improving in work. This may be related to the fact that they, because of their handicap, cannot become generally socially acceptable and that it is our more socially acceptable clients who generally are the best workers or because their inability to communicate impairs their working ability, which in turn makes them less desirable as social friends. The degree to which a person speaks, with the exception of those who tend to intellectualize and speak a lot, is often an indication of how much emotionality they are willing to lay out on the line. Those who answer clipped "yesses" or "nos" are generally extremely withdrawn emotionally and will probably offer, initially anyway, very little to work with. Those who seem prepared to open themselves up verbally may also be those who will be prepared to open themselves up emotionally and be more easily worked with.

(b) We have had clients who have come to the shop with the notion that they themselves need very little help, but they can be great assistance to others. We have found that they tend to benefit rather little from the program until this attitude can be changed and can, while maintaining this attitude, inflict some damage upon other children. One of the necessary prerequisites for gaining from a program of this kind is the recognition on the part of the client that it is providing a service for him that he needs. The client must be dissatisfied with some aspect of himself or his life in order to exercise any consistent initiative to take advantage of the program and improve. He must feel that there is something that is worthwhile working for. The more positive his perception of the program, the less resistance we will probably meet up with at the beginning and the more quickly we can aid in his vocational development.

(c) This is a general warning to the intake interviewer to be on the lookout for severe, extreme intellectual or emotional cases, because we have found in our experience that there is very little we can do with them under the circumstances of the workshop as we presently conceive of it. They generally will demonstrate less growth than the other children in the shop, will require so much more attention that relatively little is left for the less severely disabled children, and often can, with their strange behavior and disturbing habits, impair the effectiveness of the shop situation for the less severely disturbed children.

(d) Asking the intake interviewer to size up the parent has as its goal a general interest in the kind of model, the kind of influences, the client has in his day-to-day environment. There have been cases and will continue to be cases of clients about whom we felt that no demonstrable improvement could be made in their vocational development within the home environment as we evaluated it. Here we ask for the intake interviewer's general impressions of the parent, intellectually and emotionally, in order to help us gain insight into the kind of major influences that govern our client's life.

assess the nature of the relationships as it is exhibited in the interview situation.[a]

X. EXPLANATION OF PROGRAM TO CLIENT

A.

It is suggested that the standard explanation of the program be used almost verbatim with each client--that it be constructed so that some points, which we believe ought to be of interest, are not clarified. After the program is explained to the client, the intake interviewer then says, "Have you any questions?" What would you like cleared up? Is there anything more you'd like to know? We then will concentrate on what questions the client asks. We want to see, we want to use these as some indication of the client's personal interests, his personal goals in this program, what about this program does the client consider most important and the technique of explaining the program to the client, with things left out and then asking him what more he'd like to know, might be one way of getting this. After he's finished his questions, then the intake interviewer will fill in all the gaps that have been left that the client has not asked about.[b] What does the client perceive as the role of the shop and what the shop is supposed to do for him? Also, what do his parents perceive this as? Do they see it as just a job for the summer? Do you sense that they see it as a way to keep him off the street and out of the house? Do they see this as training in a specific trade? This is a misconception that many parents have had? Or do they see it for what it really is--an attempt to prepare the child to learn to work.[c] Try

(a) Here again, we are interested in the nature of the parent-child interaction, the extent to which one or the other dominates the relationship, and, in the long run, the picture of the kind of parent-child situation that exists for these two. In most cases, the ways in which the client relates to authority figures in the work situation will either be parallel to or reacting against the kinds of habitual interactions he has with his parents at the moment.

X. EXPLANATION OF PROGRAM TO CLIENT

(b) Here we are attempting to use the standard explanation of the program in a dual capacity: (1) to inform both parents and child of the nature and purposes of our program, and (2) to do it in such a way that we can gain further insight into the kinds of personal needs and goals that the child and parents are attempting to fill through our program. Whether his major questions center around the work, the other kids, the money, the future, the time off, etc., give us very suggestive leads concerning the kinds of major interests the individual has and the personal emphases he places on these various factors in the work situation.

(c) Both the child's and parent's perceptions of the role and goals of the shop and their distortions of it are important to us. A child or parents who believe that the goal is to teach the client a trade are going to be greatly disappointed in the shop. We must also make sure that the shop is not being used to some other end, as in one case where staying in the shop for four weeks was the only way a person could eventually get into cooking school. Both parents and child must see clearly that the purpose of the shop is to prepare the client for the world of work, to teach him how to be a worker, not to teach him a trade.

to assess the degree of the client's own motivation to participate in this program and the degree to which he is really coerced by his parents and has no great inclination to participate on his own. Try to get some indication of what the primary motivator for the kid is. Is it his parents' approval? Is it the money? What is the thing that makes the child look forward most positively to the workshop program?[a]

XI. SUMMARY

Here, in a very impressionistic way, the interviewer is to report his general feelings about the client, his parents, and the probability of success in the program. What does he see as the major barriers to eventual employability? What does he feel is the extent of the support that the client will receive from the parent? Does he foresee any behavioral problems that the client might have in the program? Does he observe and does he sense any specific mannerisms, behaviors, potential situations that might suggest that it would be best not having this client in the program? Anything, any observation, that the counselor has at this point that he feels strongly about and feels that is appropriate for the summary ought to belong at this point in the intake interview report.

(a) One of the most important factors for our understanding the behavior of a child in the shop is what the client himself sees as his purpose in being there. A deeper understanding of this can lead the foreman and counselor to act more appropriately in relation to the child, can direct their attempts to influence the child in certain directions, and in general assist all those who work with a given child within the program to understand his behavior in many areas.

XI. SUMMARY

(b) There is a uniquely individual personal tone that most individuals carry with them. It is not the kind of thing that can be rated on an objective rating scale, nor that can be placed conveniently into pre-existing typologies or category systems. Within the summary, we wish to see if the intake interviewer can, when it is there, capture some of this personal essence--some very impressionistic notions of what kind of child is this anyway? What kind of home is this? What, as the intake interviewer perceives it, are the barriers and the lubricants in terms of eventual employability? We feel that it is necessary to have an open-ended section of the interview available for the interviewer to set down these very individualistic kinds of feelings he may have about the child, his parents, and the total situation.

APPENDIX C

INTERVIEW CODING

To the left of each coding category is the percentage of the total initial sample of 55 subjects whose first-year interviews were coded in this manner. The accompanying number in parentheses is the actual tally which yielded that percentage. It is to be understood that whenever the total percentage adds up to less than 100%, the remaining interview protocols did not have sufficient information to be scored for that category.

I. SOCIAL HISTORY

A. Current Family Situation

1. Number of parents living with client in the home

55% (26) 0. Both parents
26% (12) 1. Mother only
9% (4) 2. Father only
2% (1) 3. Mother and stepfather
0% (0) 4. Father and stepmother
4% (2) 5. Both foster or stepparents
2% (1) 6. Institutional resident

1a. Number of previous marriages for mother or stepmother

55% (26) 0. None
17% (8) 1. 1
4% (2) 2. 2

1b. Number of previous marriages for father or stepmother

51% (24) 0. None
4% (2) 1. 1

1c. Changes in client's home situation (changes = anytime that the identity of either one of the parental figures changes)
Code number of times such changes have occurred in lifetime of child

58% (27) 0. None
19% (9) 1. 1
15% (7) 2. 2
4% (2) 3. 3

2. Number of siblings

23% (11) 0. None
17% (8) 1. 1
9% (4) 2. 2
13% (6) 3. 3
6% (3) 4. 4
11% (5) 5. 5
4% (2) 6. 6
0% (0) 7. 7
13% (6) 8. 8 and above

2a. Number of older brothers

62% (29) 0. None
19% (9) 1. 1
6% (3) 2. 2
4% (2) 3. 3
2% (1) 4. 4

2b. Number of older sisters

55% (26) 0. None
21% (10) 1. 1
15% (7) 2. 2
0% (0) 3. 3
2% (1) 4. 4

2c. Number of younger brothers

51% (24) 0. None
23% (11) 1. 1
4% (2) 2. 2
6% (3) 3. 3
6% (3) 4. 4
2% (1) 5. 5
2% (1) 6. 6

2d. Number of younger sisters

47% (22) 0. None
21% (10) 1. 1
15% (7) 2. 2
9% (4) 3. 3
2% (1) 4. 4
2% (1) 5. 5

2e. Client's sibling position

38% (18) 1. First
15% (7) 2. Second of two
32% (15) 3. Middle child of 3 or more
11% (5) 4. Last child of more than two

2f. Number of years between ages of client and oldest sibling

38%	(18)	0.	0
4%	(2)	1.	1
15%	(7)	2.	2
4%	(2)	3.	3
2%	(1)	4.	4
11%	(5)	5.	5 to 7
0%	(0)	6.	8 to 11
11%	(5)	7.	12 to 15
9%	(4)	8.	16 and above

2g. Number of years between ages of client and youngest sibling

36%	(17)	0.	0
4%	(2)	1.	1
6%	(3)	2.	2
2%	(1)	3.	3
4%	(2)	4.	4
6%	(3)	5.	5 to 7
17%	(8)	6.	8 to 11
17%	(8)	7.	12 to 15
0%	(0)	8.	16 and above

2h. Number of step-siblings

72%	(34)	0.	None
0%	(0)	1.	1
9%	(4)	2.	2
6%	(3)	3.	3
4%	(2)	4.	4
4%	(2)	5.	5

3. Stability of family situation in regard to significant figures

60%	(28)	0.	Very stable
23%	(11)	1.	Moderately stable
13%	(6)	2.	Unstable

4. Stability of expectations from parents

43%	(20)	0.	Knows what to expect
26%	(12)	1.	Some confusion as to parental expectations

5. Emotional stability of parent interviewed

83%	(39)	0.	Fairly stable--able to provide a setting which is relatively secure emotionally
6%	(3)	1.	Relatively unstable--not able to provide an emotionally secure setting

6. Relationship with parents

26% (12) 0. Looks to each parent or "foster parents" for appropriate help and support
51% (24) 1. Definitely prefers mother to father (or female parental figure to male parental figure)
11% (5) 2. Definitely prefers father to mother (or male parental figure to female parental figure)
2% (4) 3. Rejects both parents (or parental figures)

7. Number of extended family members living with client

85% (40) 0.
9% (4) 1.
2% (1) 2.

8. Number of non-family members living with client

94% (44) 0. None
0% (0)1-7. 1 to 7
2% (1) 8. 8 and above

9. Indications of mental retardation in other family members

55% (26) 0. No indications in parents or siblings
6% (3) 1. Indications in siblings
13% (6) 2. Indications in parent or parental figure
19% (9) 3. Indications in more than one family member

10. Indications of intellectual excellence in family

28% (13) 0. Indications present in at least one family member
60% (28) 1. Indications absent in family members

11. Indications of emotional disturbance in other family members

83% (39) 0. No indications of emotional disturbance in other family members
2% (1) 1. Indications of emotional disturbance in a sibling
6% (3) 2. Indications of emotional disturbance in a parent or parental figure
2% (1) 3. Indications of emotional disturbance in more than one family member

12. Relationship with siblings (amount of interaction)

55% (26) 0. Much total interaction
28% (13) 1. Little interaction

12a. With which of the siblings does the client interact the most

17% (8) 0. Older sister
17% (8) 1. Older brother
11% (5) 2. Younger sister
26% (12) 3. Younger brother

12b. Nature of above interaction

26% (12) 0. Client plays role of leader
17% (8) 1. Client plays role of follower
11% (5) 2. Client participates in fighting relationship
15% (7) 3. Mutual

12c. Pattern of interaction between client and siblings

21% (10) 0. Accustomed to accepting responsibility for at least some of siblings
4% (2) 1. Accustomed to playing role of bully
4% (2) 2. Accustomed to being babied
2% (1) 3. Accustomed to being bullied
6% (3) 4. Assumes the role of a parent to one or more siblings
13% (6) 5. Identifies one or more siblings with a "parental role"
4% (2) 6. Is no interaction
6% (3) 7. Mutual

13. Language spoken at home

77% (36) 0. Only English
6% (3) 1. Broken English
11% (5) 2. English and a foreign language
0% (0) 3. Only a foregin language

B. Physical Conditions of Home

1. Number of client moves in last 15 years

11% (5) 0. None
6% (3) 1. 1
11% (5) 2. 2
28% (13) 3. 3
15% (7) 4. 4
17% (8) 5. 5
4% (2) 6. 6

1a. Extent of moves in last 15 years

9% (4) 0. Same building or street, different residences
6% (3) 1. Same neighborhood, different residences
43% (20) 2. Same city or town, different neighborhoods, (include from suburb to suburb)
9% (4) 3. Same state, different towns
23% (11) 4. Interstate move or more

1b. Number of client moves in last 5 years

38% (18) 0. None
4% (2) 1. 1
28% (13) 2. 2

15%	(7)	3.	3
11%	(5)	4.	4
0%	(0)	5.	5
2%	(1)	6.	6

1c. Extent of client moves in last 5 years

30%	(14)	0.	Same building or street, different residences
11%	(5)	1.	Same neighborhood, different residences
36%	(17)	2.	Same city or town, different neighborhoods (include from suburb to suburb)
4%	(2)	3.	Same state, different towns
9%	(4)	4.	Interstate move, or more

2. Total number of individuals living in client's home

0%	(0)	0.	None
0%	(0)	1.	1
6%	(3)	2.	2
13%	(6)	3.	3
15%	(7)	4.	4
9%	(4)	5.	5
15%	(7)	6.	6
9%	(4)	7.	7
28%	(13)	8.	8 and above

2a. Total number of rooms in client's home

34%	(16)	0.	4 or more
6%	(3)	1.	3
0%	(0)	2.	1 or 2 rooms only

2b. Number of individuals with whom client shares room

23%	(11)	0.	None
17%	(8)	1.	1
6%	(3)	2.	2
4%	(2)	3.	3
4%	(2)	4.	4
0%	(0)	5.	5
2%	(1)	6.	6
0%	(0)	7.	7
2%	(1)	8.	8 and above

2c. If room of client is shared, with whom is it shared

21%	(10)	0.	Client has own room
23%	(11)	1.	Client shares room with 1 or 2 siblings
13%	(6)	2.	Client shares room with more than 2 siblings
2%	(1)	3.	Client shares room with parents or other family members (aunts, cousins, etc.) with or without other siblings

3. Opportunities for privacy at home

26% (12) 0. Client has chance to be by himself when he desires
38% (18) 1. For the most part, client has very little opportunity for privacy

4. Does client have property of his own

28% (13) 0. Has own property and has control over his own possessions (toys, clothes, equipment, etc.)
0% (0) 1. Has some control over his own possessions, but asks permission concerning their use
2% (1) 2. Has very little control over his own possessions, parents or parental figures exert primary control
2% (1) 3. Has no possessions he can call his own

4a. Are possessions "appropriate" for client's age

6% (3) 0. Client owns large number of possessions appropriate for age
17% (8) 1. Client owns small number of possessions (toys, games, books, clothing, etc.) appropriate for age
4% (2) 2. Client has no possessions appropriate for age

4b. Are possessions "appropriate" for client's sex

26% (12) 0. Possessions are appropriate for client's sex
0% (0) 1. Possessions are inappropriate for client's sex
2% (1) 2. Client has no possessions

4c. Does the client own "luxury items"

15% (7) 0. The client owns luxury items such as a radio, T.V. set, bicycle, etc.
11% (5) 1. The client owns no "luxury items"

C. Family Work History

1. Father's present employment status (or that of father figure)

70% (33) 0. Employed full time
0% (0) 1. Employed part time
6% (3) 2. Unemployed

1a. Father's present job

0% (0) 0. Professional
0% (0) 1. Owner of business, large
4% (2) 2. Owner of business, small
9% (4) 3. White collar worker
11% (5) 4. Blue collar worker, in supervisory capacity
43% (20) 5. Blue collar worker, in non-supervisory capacity

1b. Number of jobs held in last 10 years

51% (24) 0. Stable work on three or fewer jobs in last 10 years
2% (1) 1. Stable work on more than three jobs in last 10 years
6% (3) 2. Frequent unemployment in last 10 years
2% (1) 3. Stable unemployment in last 10 years

2. Mother's present employment status (leave out of stability score)

62% (29) 0. Housewife
19% (9) 1. Employed, full time
13% (6) 2. Employed, less than full time
4% (2) 3. Unemployed, but looking for job

2a. Mother's job

66% (31) 0. Housewife
2% (1) 1. Professional
0% (0) 2. Owner of business
15% (7) 3. White collar
15% (7) 4. Blue collar

2b. Number of jobs held by mother in last 10 years

28% (13) 0. Housewife for last 10 years
34% (16) 1. Stable work on three or fewer jobs in last 10 years
0% (0) 2. Stable work on more than three jobs in last 10 years
9% (4) 3. Infrequent periods of employment in last 10 years

3. Work pattern of other significant figures (siblings, aunts, uncles, etc.)

55% (26) 0. Stable work pattern(s)
2% (1) 1. Unstable work pattern(s)
2% (1) 2. Frequent or stable unemployment
6% (3) 3. Realistically, none have worked much (i.e., they are not occupationally oriented)

D. Family Educational History

1. Number of years of father's education

2% (1) 0. 0
0% (0) 1. 1
6% (3) 2. 2 or 3
4% (2) 3. 4 or 5
4% (2) 4. 6 or 7
9% (4) 5. 8 or 9
38% (18) 6. 10 to 12
4% (2) 7. 13 to 15
4% (2) 8. 16

1a. Level of father's education

0% (0) 0. College degree
9% (4) 1. Some years of college after high school diploma
2% (1) 2. Some years of technical training after high school diploma
23% (11) 3. Obtained high school diploma or trade school diploma
21% (10) 4. Some years of high school or trade school
6% (3) 5. Completed eighth grade
19% (9) 6. Some years of primary school, graded or ungraded
0% (0) 7. Attended primary school at intervals
2% (1) 8. No formal education to speak of

2. Number of years of mother's education

4% (2) 0. 0
0% (0) 1. 1
4% (2) 2. 2 or 3
2% (1) 3. 4 or 5
9% (4) 4. 6 or 7
19% (9) 5. 8 or 9
38% (18) 6. 10 to 12
6% (3) 7. 13 to 15
2% (1) 8. 16

2a. Level of mother's education

0% (0) 0. College degree
0% (0) 1. Some years of college after high school diploma
9% (4) 2. Some years of technical training after high school diploma
21% (10) 3. Obtained high school or trade school diploma
23% (11) 4. Some years of high school or trade school
17% (8) 5. Completed eighth grade
19% (9) 6. Some years of primary school, graded or ungraded
0% (0) 7. Attended primary school at intervals
6% (3) 8. No formal education to speak of

3. Sibling education

34% (16) 0. All older siblings have either finished high school, or are at more or less appropriate grade levels
9% (4) 1. Some older siblings have either finished high school, or are at more or less appropriate grade levels
17% (8) 2. No siblings have finished high school, or are at more or less appropriate grade levels

3a. Sibling educational opportunity

34% (16) 0. All older siblings have taken full advantage, or significant advantage of educational opportunities
4% (2) 1. Some older siblings have taken full or significant advantage of educational opportunities
17% (8) 2. No siblings have taken significant advantage of educational opportunities
2% (1) 3. Older siblings have had no educational opportunities (ex. They had to go to work before finishing high school, etc.)

3b. Is there an older sibling who is a strong figure for identification

23% (11) 0. Yes
58% (27) 1. No

3c. If there is an older sibling who is a strong figure for identification, his educational history

11% (5) 0. High school graduate or above
4% (2) 1. Some high school
4% (2) 2. Elementary school
2% (1) 3. Ungraded classes
58% (27) 4. No older sibling, or none who is strong figure to client

E. Salient Medical or Emotional Characteristics of Family Members

1. General health of father

66% (31) 0. Generally good health
0% (0) 1. Mental retardation
2% (1) 2. Emotional disturbance
0% (0) 3. Epilepsy or other neurological disorder
2% (1) 4. Any chronic illness, e.g., arthritis, asthma, multiple sclerosis, etc.
9% (4) 5. Any series of acute illnesses or accidents, etc.

2. General health of mother

75% (35) 0. Generally good health
4% (2) 1. Mental retardation
2% (1) 2. Emotional disturbance
0% (0) 3. Epilepsy or other neurological disorder
4% (2) 4. Any chronic illness, e.g., arthritis, asthma, multiple sclerosis, etc.
4% (2) 5. Any series of acute illnesses or accidents, etc.

3. General health of siblings

62% (29) 0. Generally good health
4% (2) 1. Mental retardation
0% (0) 2. Emotional disturbance
2% (1) 3. Epilepsy or other neurological disorder
2% (1) 4. Any chronic illness, e.g., arthritis, asthma, multiple sclerosis, etc.
2% (1) 5. Any series of acute illnesses or accidents, etc.
6% (3) 6. More than one of these is present

F. Parents' Expectations for Client

1. What do parents perceive as child's major problems

66% (31) 0. Parents perceive child's problems as intellectual
0% (0) 1. Parents perceive child's problems as social
0% (0) 2. Parents perceive child's problems as vocational
4% (2) 3. Parents perceive child's problems as emotional-motivational

11% (5) 4. Parents perceive problem as not really with their child, but with the school authorities who do not appreciate their child's efforts
13% (6) 5. Other

2. Parents' ideas of etiology of handicap

21% (10) 0. Explanation seems rational and likely
9% (4) 1. Explanation appears to be folklore
15% (7) 2. Explanation appears to be delusional
38% (18) 3. Don't know, no explanation

3. Type of explanation given for etiology of handicap

2% (1) 0. Prenatal accident
11% (5) 1. Natal or postnatal accident
0% (0) 2. Emotional trauma
9% (4) 3. Caused by school
6% (3) 4. Result of divine intervention or fate (i.e., born with it)
15% (7) 5. Other
40% (19) 6. No explanation

4. Realism of mother's aspirations for child

58% (27) 0. Expects achievement, but limited and realistic
15% (7) 1. Expects child to achieve beyond possible level
0% (0) 2. Feels child is hopeless

5. Realism of father's aspirations for child

15% (7) 0. Expects achievement, but limited and realistic
4% (2) 1. Expects child to achieve beyond possible level
0% (0) 2. Feels child is hopeless

6. Mother's ideas on what can be done to help their child

40% (19) 0. Parents' ideas are realistic
9% (4) 1. Parents' ideas are unrealistic, considering the nature of the child's problems
2% (1) 2. Parents believe that nothing can be done to help their child (e.g., handicap is "fated")
21% (10) 3. In parents' view, nothing needs to be done to help their child

7. Father's ideas on what can be done to help their child

9% (4) 0. Parents' ideas are realistic
6% (3) 1. Parents' ideas are unrealistic, considering the nature of the child's problems
0% (0) 2. Parents believe that nothing can be done to help their child (e.g., handicap is "fated")
4% (2) 3. In parents' view, nothing needs to be done to help their child

II. PEER GROUP ASSOCIATIONS

A. Description of Friendship Patterns

1. Number of friendships

40% (19) 0. Has a number of friends who are seen outside of school
38% (18) 1. Has two or three friends
19% (9) 2. Client is basically a social isolate or has 1 friend

2. Ages of friends

64% (30) 0. Friends are primarily the same age
4% (2) 1. Friends are primarily older
26% (12) 2. Friends are primarily younger
4% (2) 3. No friends

3. Relationships to friends

58% (27) 0. Primarily mutual
6% (3) 1. More aggressive member of group(s)
26% (12) 2. More passive member of group(s)
4% (2) 3. No friends

4. Sex of friends

23% (11) 0. Client has friends of both sexes
68% (32) 1. Friends tend to be of client's sex
2% (1) 2. Friends tend to be of opposite sex
4% (2) 3. No friends

5. Ability of friends

17% (8) 0. Friends are mostly of average ability and intelligence
26% (12) 1. Client's friends are mostly other retarded children
19% (9) 2. Both kinds
2% (1) 3. No friends

6. Stability of peer associations

26% (12) 0. Continuous group of associates over time, basically stable
11% (5) 1. Friendships seem to change naturally as interests of client change
13% (6) 2. Client is constantly involved in changing or shifting relationships

7. Termination of friendships

4% (2) 0. Friendships, when terminated, are usually terminated amiably
0% (0) 1. Friendships are usually terminated with pain and frustration
0% (0) 2. Client has no friends

8. Initiation of friendships

2% (1) 0. Friendships are initiated by both client and others
0% (0) 1. Friendships are usually initiated by client
2% (1) 2. Friendships in which the client participates are usually initiated by others
0% (0) 3. No friends

9. Initiation of termination of friendships

0% (0) 0. Friendships are terminated by both the client and others
0% (0) 1. The client usually initiates the termination of a friendship
2% (1) 2. Others usually initiate the termination of a friendship in which the client participates
0% (0) 3. No friends

10. Client's needs concerning social relationships

32% (15) 0. Client appears to have no "Neurotic needs" regarding social relationships
17% (8) 1. Client appears to need to be led
19% (9) 2. Client appears to have a need to dominate in his social relationships
0% (0) 3. Client appears to need to be laughed at
0% (0) 4. Client appears to need to laugh at someone

*B. Client's Social Self Concept

1. Client's perception of himself socially

45% (21) 0. Client perceives himself as being popular
51% (24) 1. Client perceives himself as being lonely, as being unpopular

C. Client's Experience in Formal Groups

1. Membership of client in formal groups

51% (24) 0. Client belongs to one or more structured, institutional work or social groups (e.g., Boy or Girl Scouts, church group, etc.)
47% (22) 1. Client does not belong to a formal group

2. History of client's membership in formal groups

62% (29) 0. Client has belonged in the past to one or more formal groups
36% (17) 1. Client has never belonged to a formal group

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*Stability score: the lower the score, the higher the stability.

3. Client's feelings toward formal group experience

32% (15) 0. In general, the client associates formal group membership with predominantly pleasant experiences
17% (8) 1. In general, the client feels ambivalently toward formal group membership
4% (2) 2. In general, the client holds negative feelings toward membership in formal groups

21% (10) 3. Client has no experience in formal groups

4. Client's camping experience

28% (13) 0. Client has had experience at day camps or overnight camps
40% (19) 1. Client has had no camping experience

D. Longitudinal View of Peer Group Relationships

2% (1) 0. Client's peer relationships seem to be improving from his past relationships
26% (12) 1. Client's peer group associations represent a long standing, relatively unchanging pattern
9% (4) 2. Client's present peer group associations represent a disintegration or decline in the success the client has had with peer associations
26% (12) 3. Client has a history of very few or no peer group associations

III. MAJOR ADVOCATIONS

A. Client's Hobbies

1. Nature of client's hobbies

23% (11) 0. Client has a hobby requiring moderate amount of physical or intellectual ability
30% (14) 1. Client has a simple hobby
43% (20) 2. No hobbies

2. Assessment of hobby

17% (8) 0. Painstakingly done and well cared for
23% (11) 1. Fairly well done
4% (2) 2. Sloppy, incomplete work
43% (20) 3. No hobbies

*3. Client's assessment of hobby

23% (11) 0. Evaluates his work realistically
0% (0) 1. Overevaluates his work
4% (2) 2. Depreciates his work
43% (20) 3. No hobbies

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*Stability score: the lower the score, the higher the stability.

4. Client's interest in hobby

30% (14) 0. Enthusiastic
6% (3) 1. Mild interest
0% (0) 2. No or very little interest
43% (20) 3. No hobbies

5. Duration of hobby

23% (11) 0. Sustained interest in same or related activities over at least several months
0% (0) 1. Interest sustained for short period
0% (0) 2. No sustained interest
43% (20) 3. No hobbies

6. Amount of time spent working hobby

6% (3) 0. Works on hobby daily
6% (3) 1. Works on hobby every week
0% (0) 2. Works on hobby every month
4% (2) 3. Works on hobby only occasionally

B. Client's Interests

1. Level of interests

53% (25) 0. Appropriate to age level
30% (14) 1. Slightly below age level
13% (6) 2. Decidedly immature

2. Major leisure time activity

23% (11) 0. Sports
4% (2) 1. Reading
28% (13) 2. Television
4% (2) 3. Homemaking
6% (3) 4. Making and repairing personal or household items
9% (4) 5. Hobbies or collections
21% (10) 6. Unorganized play (e.g., tag, ball throwing)

3. Primary place of activities (see #2)

53% (25) 0. Home
40% (19) 1. Neighborhood
2% (1) 2. Clubs or organizations

4. Nature of activity, (a) (see #2)

49% (23) 0. Sedentary
47% (22) 1. Active

5. Nature of activity, (b) (see #2)

6% (3) 0. Intellectual
32% (15) 1. Certain degree of mental activity required
55% (26) 2. Physical

6. Person(s) client engages in activities with

23% (11) 0. Peers
19% (9) 1. Younger children
0% (0) 2. Older children
0% (0) 3. Parents
2% (1) 4. Relatives or older adults
47% (22) 5. Primarily individual activity

7. Who initiates activities

49% (23) 0. Client
2% (1) 1. Others, including parents

IV. MEDICAL HISTORY

A. Client's Medical History

1. Birth of child

26% (12) 0. Normal
13% (6) 1. Abnormal

2. Client's development

30% (14) 0. Normal
13% (6) 1. Slow
11% (5) 2. Extremely slow in one or more areas

3. History of illness

49% (23) 0. No illness outside of normal childhood diseases
19% (9) 1. Has had serious illness

4. History of accidents

45% (21) 0. No accidents
13% (6) 1. History of minor accidents
9% (4) 2. Has been involved in one or more serious accidents

5. History of shock or traumatic incidents

62% (29) 0. No traumatic incidents
4% (2) 1. Client has experienced a severe shock or trauma at some time in his life

6. Current health

60%	(28)	0.	Healthy
30%	(14)	1.	Minor health problem
4%	(2)	2.	Serious health problem

7. Client's health problems

55%	(26)	0.	No health problems
0%	(0)	1.	Visual defect
2%	(1)	2.	Hearing defect
9%	(4)	3.	Speech defect
9%	(4)	4.	Motor defects
0%	(0)	5.	Evidence of brain damage
0%	(0)	6.	Thyroid irregularities
13%	(6)	7.	Other
6%	(3)	8.	More than one of these

8. Medical limitation

72%	(34)	0.	None
17%	(8)	1.	Minor
4%	(2)	2.	Client is seriously limited in his activity

9. Assessment of child's energy level

9%	(4)	0.	High
0%	(0)	1.	Average
6%	(3)	2.	Low

10. Is the client taking medicine which may affect his behavior

66%	(31)	0.	No
17%	(8)	1.	Yes

11. Family's medical status

55%	(26)	0.	Family has a doctor or doctors
13%	(6)	1.	Family frequents a clinic
6%	(3)	2.	Family has neither

*B. Client's Physical Self-Concept

*1. Client's perception of health

53%	(25)	0.	Feels he is strong, healthy, well made
23%	(11)	1.	Feels adequate
21%	(10)	2.	Feels inferior in strength and health

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*Stability score: the lower the score, the higher the stability.

*2. Client's perception of appearance

34% (16) 0. Feels he is attractive
34% (16) 1. Feels adequate
21% (10) 2. Feels unattractive
0% (0) 3. Feels repulsive

*3. Client's reaction to physical handicap

60% (28) 0. No handicap
9% (4) 1. Recognizes and accepts handicap
11% (5) 2. Recognizes handicap, but is overly sensitive about it
6% (3) 3. Denies handicap

V. EDUCATIONAL BACKGROUND

A. Educational History

1. Number of years in regular classes

64% (30) 0. More than two years in regular classes
9% (4) 1. Has been in regular classes through 1-c
19% (9) 2. Has never been in regular classes

2. Number of schools client has attended

2% (1) 0. None
4% (2) 1. 1
13% (6) 2. 2
21% (10) 3. 3
26% (12) 4. 4
23% (11) 5. 5
2% (1) 6. 6
0% (0) 7. 7
4% (2) 8. 8 and above

3. Location of school attended

53% (25) 0. Entire attendance in Chicago public schools
19% (9) 1. Attended private or parochial schools in Chicago
23% (11) 2. Attended school out of state or city

4. Reason for EMH placement

40% (19) 0. Primarily because of a handicap which had interfered with normal learning--"slow learner"
26% (12) 1. Primarily on basis of I.Q. and achievement scores
6% (3) 2. Primarily because of behavior problems

---

*Stability score: the lower the score, the higher the stability.

5. Client's general attitude toward school

60% (28) 0. Positive
28% (13) 1. Mixed
6% (3) 2. Negative

6. Client's feelings toward teachers

75% (35) 0. Primarily positive
19% (9) 1. Primarily negative

7. Client's expectations of teachers

21% (10) 0. Expectations "jibe" with good work attitudes and values
60% (28) 1. Expectations do not "jibe" with good work attitudes and values (e.g., likes teacher because he is easy)

8. Feelings toward workshop experience

36% (17) 0. Very pleased
45% (21) 1. Moderately pleased
11% (5) 2. Ambivalent (OK, etc.)
4% (2) 3. Negative

9. Feelings toward workshop primarily related to:

26% (12) 0. Acquiring work skills and habits
17% (8) 1. Acquiring social skills
9% (4) 2. Acquiring money
0% (0) 3. Acquiring extraneous benefits (coffee break, time clock)
23% (11) 4. More than one
4% (2) 5. Feels he gained nothing
13% (6) 6. Can't say

*B. Client's Educational Self-concept

*1. Client's understanding of special classes placement

36% (17) 0. Because he is a slow learner
4% (2) 1. Because he is a behavior problem
11% (5) 2. Because teacher or family decided he should be in a special class
17% (8) 3. Does not know why he is in special classes

*2. Client's acceptance of special classes

43% (20) 0. Seems completely satisfied with special classes
28% (13) 1. Accepts facts that he belongs there, but would rather be in regular classes
15% (7) 2. Feels he does not belong there
6% (3) 3. Denies he is in special classes

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*Stability score: the lower the score, the higher the stability.

*3. Client's perceived attitudes of others toward his placement

26% (12) 0. Client feels other people accept him--irregardless of special classes
15% (7) 1. Client feels other people regard him as inferior because he is in special classes

*4. Client's educational aspirations

36% (17) 0. Expects to achieve to a realistic level
53% (25) 1. Expects to achieve beyond possible level
6% (3) 2. Expects nothing of himself

VI. WORK BACKGROUND

A. Chores in Home

1. Number of chores in home

28% (13) 0. Over three
64% (30) 1. 1-3
4% (2) 2. None

2. Degree to which client can assume responsibilities of chores independently

23% (11) 0. Almost or always assumes
4% (2) 1. Usually assumes
6% (3) 2. Occasionally assumes
26% (12) 3. Needs to be told each time

3. Extent to which client performs chores beyond his immediate personal area, property

40% (19) 0. Considerably beyond
34% (16) 1. Moderately beyond
15% (7) 2. A little beyond
2% (1) 3. Personal only, or none

4. Parental reinforcement, reward for performing chores

43% (20) 0. Freely give praise, reward as part of plan to help child assume increasing responsibility
21% (10) 1. Occasional mild praise, reward
9% (4) 2. Parent sees performance of chores as expected behavior; tends to be indifferent
9% (4) 3. No praise, reward

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*Stability score: the lower the score, the higher the stability.

B. Jobs Outside Home

1. Number of outside jobs held

6% (3) 0. Over two
55% (26) 1. 1-2
36% (17) 2. None

2. How job was secured

11% (5) 0. Self
4% (2) 1. Newspaper ad; response to "help wanted" sign
13% (6) 2. Friends
13% (6) 3. Parents, relatives

3. Number of times given job performed (average number if more than one job)

23% (11) 0. Over 10
6% (3) 1. 6-10
11% (5) 2. 2-5
4% (2) 3. Once

4. Protectedness of job

32% (15) 0. Worked in general community
17% (8) 1. Worked for friends, neighbors
11% (5) 2. Worked for relatives

VII. VOCATIONAL GOALS

*1. Client's vocational aspirations

17% (8) 0. Realistic, compatible with potential abilities, personality
32% (15) 1. Somewhat realistic, but unlikely
21% (10) 2. Unrealistic
4% (2) 3. Highly unrealistic, phantasy
23% (11) 4. Doesn't know

2. Parents' vocational aspirations for client

51% (24) 0. Realistic, compatible with potential abilities, personality
11% (5) 1. Somewhat realistic, but unlikely
9% (4) 2. Unrealistic
0% (0) 3. Highly unrealistic, phantasy
21% (10) 4. Doesn't know

3. Client's vocational goals modeled after

19% (9) 0. Parents, other close adult figures
6% (3) 1. Peers (siblings, friends, relatives)
15% (7) 2. T.V., movie actors, roles

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*Stability score: the lower the score, the higher the stability.

4. Parents' knowledge of client's vocational aspirations

19%	(9)	0.	Knows well
47%	(22)	1.	Knows vaguely
25%	(12)	2.	Doesn't know

5. Client's knowledge of parents' aspirations for client

13%	(6)	0.	Knows well; clearly communicated
21%	(10)	1.	Parents have indicated general area
6%	(3)	2.	Parents say "it's up to you"
55%	(26)	3.	Doesn't know

VIII. IMPRESSIONS OF INTERVIEWER IN REGARD TO EMPLOYABILITY

40%	(19)	0.	Interviewer confident of employability
6%	(3)	1.	Interviewer confident of employability after additional training
19%	(9)	2.	Interviewer confident of employability after change of attitudes and/or habits
9%	(4)	3.	Interviewer unsure of eventual employability
13%	(6)	4.	Interviewer skeptical of employability

APPENDIX D

CODING SYSTEM FOR PROJECTIVE DRAWINGS

The coding system below was developed prior to pilot testing. After pilot testing, only those items marked (*) were used for scoring the drawings of subjects in the longitudinal sample.

	Category	Category Definition	Scoring
*1.	Size of Figure	Small (Responding to demands of environment with feelings of inferiority--less than ½ of page); large (Responding to demands of environment with feelings of expansion--more than ½ of page).	1 Large 0 Small
2.	Location of Upper or Lower	Upper ½ is a high standard of achievement with a striving to attain; lower ½ reflects stable, firmly rooted individual with realistic level of aspiration	1 Lower ½ 0 Upper ½
3.	Location Left Side	Self-conscious or introverted	1 Not on Left 0 On Left Side
4.	Location Right Side	Negativism and rebelliousness	1 Not on Right 0 On Right Side
5.	Location Center	Self-directed, adaptive and self-centered	1 In Center 0 Not in Center
6.	Location Top Edge	Figure up against top or bottom edge; figure not at either extreme	1 Not at Top or Bottom 0 At Top or Bottom
*7.	Movement of Figure	Active motion--standing; any appendages extended as in walking, running, throwing, etc. Static motion--sitting, lying, kneeling, bending, standing with body perpendicular to ground (appendages also perpendicular)	1 Active 0 Static

	Category	Category Definition	Scoring
8.	View of Figure	Full front view of figure; partial front and partial profile, full profile	2 Full Front 1 Partial Front and Profile 0 Full Profile
*9.	Sex Drawn First	Same sex drawn first; ambiguous sex (objectively interchangeable male and female figures) opposite sex	2 Same Sex 1 Ambiguous Sex 0 Opposite Sex
10.	Motor Coordination	Well coordinated; poorly coordinated (look at long lines in arms, legs and trunk. Lines should be firm, well-controlled and free from accidental wavering. A few long lines may be retraced or erased. The drawing need not achieve very smoothly flowing lines. Drawings that rely entirely on sketching are scored zero).	1 Good Coordination 0 Poor Coordination
*11.	Head Size	Present and adequately sized (not more than ½ nor less than 1/10 of trunk); present and excessively small (less than 1/10 that of trunk); or excessively large (more than ½ that of trunk); absent	2 Present and Adequate 1 Present and too Small or Large 0 Absent
12.	Hair	Presence or absence	1 Present 0 Absent
13.	Eyes	Present and adequately detailed including brow and/or lash, and pupil; present and represented by dot, oval, circle or cross with lack of adequate detail; or absent	2 Present and Detailed 1 Present and not Detailed 0 Absent
14.	Nose	Present and portrayed in two dimensions; present and portrayed by dots or crosses (lack of adequate detail); or absent	2 Present and Detailed 1 Present and not Detailed 0 Absent
15.	Mouth Corners	Present and corners go up; present and corners go down; mouth absent	2 Present and Corners Up 1 Present and Corners Down 0 Absent

Category	Category Definition	Scoring
16. Mouth Shape	Present and portrayed with lips; present and portrayed by slash, oval or circle; or absent	2 Present with Lips 1 Present with No Detail 0 Absent
17. Ears	Present and vertical measurement greater than horizontal measurement; present and horizontal measurement greater than vertical measurement; or absent	2 Present and Vertical 1 Present and Horizontal 0 Absent
*18. Neck	Present and continuous with that of head, trunk or both; present and interposed between head and trunk but not continuous with either; or absent	2 Present and Continuous 1 Present and not Continuous 0 Absent
19. Shoulders	Present and continuous with neck and arms; present and connected to but not continuous with trunk; or absent	2 Present and Continuous 1 Present and not Continuous 0 Absent
*20. Trunk Dimensions	Present and two-dimensional; present and uni-dimensional; or absent	2 Present and 2-D 1 Present and 1-D 0 Absent
*21. Trunk Size	Present and length greater than breadth; present and breadth greater than length; or absent	2 Present and Length 1 Present and Breadth 0 Absent
*22. Trunk Represented	Present and torso adequately represented; present and torso bizarre or distorted or absent	2 Present and Adequate 1 Present and Bizarre 0 Absent
23. Arm Dimensions	Present and two-dimensional; present and uni-dimensional; or absent	2 Present and 2-D 1 Present and 1-D 0 Absent
*24. Size of Arms	Present and proportionately adequate; present and very short (less than length of trunk) or very long (arms extend to knees or below); or absent	2 Present and Adequate 1 Present and Distorted 0 Absent

Category	Category Definition	Scoring
*25. Use of Arms	Present and engaged in actity; present and at side of body; or absent	2 Present and Active 1 Present and Passive 0 Absent
*26. Arms to Shoulders	Present and properly placed in relation to shoulders; present and attached to parts of body other than shoulders; or absent	2 Present and Proper 1 Present and Improper 0 Absent
*27. Hands Dimensions	Present and two-dimensional; present and uni-dimensional; or absent	2 Present and 2-D 1 Present and 1-D 0 Absent
*28. Hands Shape	Present and adequate represented; present and distorted (obviously poorly shaped or inadequate represented); or absent	2 Present and Adequate 1 Present and Inadequate 0 Absent
29. Fingers Count	Present and correct number; present and incorrect number; or absent	2 Present and Correct 1 Present and Incorrect 0 Absent
30. Fingers Proportion	Present and correct proportion (length greater than width); present and incorrect proportion (width greater than length); or absent	2 Present and Correct 1 Present and Incorrect 0 Absent
31. Fingers and Thumb	Present and a clear differentiation of thumb from rest of fingers; present and unclear differentiation of thumb from rest of fingers; or absent	2 Fingers Present and a Thumb 1 Present and no thumb 0 Absence of Fingers
32. Legs Proportion	Present and adequately represented by shpae, size and proprotion; present and poorly represented by shape, size and proportion; or absent	2 Present and Adequate 1 Present and Inadequate 0 Absent
33. Legs Connection	Present and properly connected to trunk; present and improperly connected to trunk; and absent	2 Present and Proper 1 Present and Improper 0 Absent
*34. Feet Dimensions	Present and two-dimensional; present and uni-dimensional; or absent	2 Present and 2-D 1 Present and 1-D 0 Absent

	Category	Category Definition	Scoring
*35.	Feet Proportion	Present and adequately former and proportioned to leg; present and poorly formed and out of proportion to leg (length of foot must not be more than 1/3 or less than 1/10 to total length of leg); or absent	2 Present and Adequate 1 Present and Poorly 0 Absent
*36.	Clothing	Presence of two or more items (buttons included as one item); or less than 2 items	1 Present 0 Less than 2
37.	Embellishments	Presence of objects not part of person or figure: e.g., background objects, cigarettes pipes, etc.) aside from clothing; or absent	1 Absent 0 Present

APPENDIX E

FACTOR LOADINGS ON BASIC STATUS VARIABLES OF WHITE AND NEGRO SUBJECTS, YEARS I-III

FACTOR LOADINGS FOR TWELVE BASIC VARIABLES OVER THREE YEARS, WHITE SUBJECTS (N = 22)

Variable	Year One Factor and % of Variance Accounted for				Year Two Factor and % of Variance Accounted for			Year Three Factor and % of Variance Accounted for		
	I (24)	II (18)	III (18)	IV (15)	I (36)	II (17)	III (16)	I (35)	II (14)	III (18)
Drawings	.15	-.13	.36	-.76	.31	.41	.36	-.12	.01	-.56
Self-Concept	.06	.21	.76	-.09	.16	.19	.75	.37	.02	.77
Interview	.01	-.02	.82	.11	-.21	-.16	.82	-.16	.08	.80
Level of Asp.	.15	.87	.65	.13	.52	.75	.12	.70	.10	.02
Aspiration Index	-.10	.92	.06	-.04	.00	.92	.00	.24	-.87	-.01
Production	-.46	-.16	-.31	-.66	-.70	-.17	-.43	-.84	.26	-.12
Ratings	-.74	-.02	-.16	-.04	-.72	-.10	.11	-.62	-.35	-.37
Purdue	-.44	-.54	-.43	-.35	-.65	-.31	-.37	-.78	.22	-.29
Vineland	-.34	.12	-.42	-.57	-.66	.01	-.12	-.63	-.12	.18
WISC IQ	-.86	-.02	-.13	-.23	-.84	.10	.13	-.64	-.24	-.45
WISC Verbal	-.88	-.11	.12	.00	-.70	.39	.31	-.34	-.75	-.08
Employability	-.45	-.34	-.47	-.49	-.87	-.29	-.19	-.89	-.06	-.30

FACTOR LOADINGS FOR TWELVE BASIC VARIABLES OVER THREE YEARS, NEGRO SUBJECTS (N = 14)

Variable	Year One Factor and % of Variance Accounted for			Year Two Factor and % of Variance Accounted for			Year Three Factor and % of Variance Accounted for		
	I (29)	II (22)	III (17)	I (34)	II (20)	III (13)	I (32)	II (21)	III (12)
Drawings	.00	-.05	-.83	.09	.56	.63	.09	.03	.88
Self-Concept	.47	.46	-.01	.76	.02	.16	.50	.22	-.18
Interview	.74	-.16	.22	.68	.12	-.39	-.24	.62	.00
Level of Asp.	.06	.95	.16	-.23	-.75	.27	.22	.75	.15
Aspiration Index	-.01	.93	.19	.06	-.30	.89	.55	.25	-.36
Production	.80	.04	-.14	.33	-.74	.09	.77	.06	.24
Ratings	-.08	-.68	.51	.83	.13	.24	.90	-.10	-.12
Purdue	.79	.15	.20	.64	.66	.20	.83	.14	.04
Vineland	.13	.20	.77	.40	-.10	.06	-.02	.57	.36
WISC IQ	.57	-.21	.48	.54	-.43	-.05	.27	.70	-.41
WISC Verbal	.80	.23	.20	.87	-.09	-.20	.32	.75	-.34
Employability	.67	.12	-.32	.74	.39	.04	.96	-.03	.06

APPENDIX F

SELF-CONCEPT SCALE

APPENDIX F

LAURELTON SELF-ATTITUDE QUESTIONNAIRE*

Item No.

1. I always do what I am told
2. The teacher thinks I'm sore of jittery
3. People think I get upset too easily at work
4. Others think I have trouble getting along with older people
5. I feel at ease playing games with older people
6. New jobs scare me to death
7. It is easy for me to read aloud in class
8. People think I get into more trouble than most girls my age
9. I am as smart as most girls
10. I tell the truth every single time
11. Other girls can sew better than I can
12. People think I am pretty good at games and sports
13. It's my fault when something goes wrong
14. At school, the girls think I am as good looking as the others
15. I am better than others
16. I like to stick up for people
17. Sometimes other people think I am a pest
18. I feel left out of things
19. It takes me a long time to make up my mind
20. I seem to get into a lot of fights
21. I can tell what is right and wrong
22. At times I feel like swearing
23. People think I am healthy enough to do any kind of job
24. I look as nice as other girls
25. People think I am as popular as most girls
26. In housework I am as good as most girls
27. People think other girls learn more quickly than I do
28. I am as strong as other girls
29. Sometimes I act silly
30. People think I have as many older persons for friends as other girls do
31. I need help more than some of the girls in school
32. Sometimes at home, I wish I were dead
33. I am often nervous when I am with older people
34. Most people think I am pretty healthy
35. The future looks good
36. I need a lot of pushing to get something done
37. I moan and complain a lot
38. I need help
39. I am as smart as the other girls in school
40. Some of the girls think I am full of fun
41. Most people think I am as healthy as they are
42. Some people think I am poor at sports
43. I think I am pretty
44. I get mad more easily than some girls in school when the teacher scolds me
45. Other people think I am well liked at work
46. At home, they think I should dress better

(continued...)

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*Developed by George Guthrie, Pennsylvania State University, University Park, Pa.

Item No.

47. I have a quick temper
48. I often do things to make people feel badly
49. I like everyone I know
50. I am a nuisance to people
51. I have hardly any friends at home
52. Some girls I play games with think I am weaker than they are
53. Other people think I am as healthy as most girls who go to school
54. I like to help people in trouble
55. I am always kind
56. At school, the teacher seems to like the other girls better than she likes me
57. I am quite a show-off
58. I have a good record
59. I sometimes hurt people
60. People think I get sick in school more than most girls
61. I feel I am getting ahead
62. I am proud of myself
63. It is good to get high marks at school
64. I feel I am an important person
65. I need someone to tell me to do my work
66. Others think that I control my temper pretty well
67. I talk too much
68. I get along as well with most girls as the rest do
69. Sometimes, I am too nosy
70. It is hard to make friends at school
71. I think I am as honest as most girls
72. People I play games with think I am as strong as most girls my age
73. I am a clumsy person
74. Most girls think they are better-looking than I am
75. Others think I could behave better
76. Most people think I make friends as easily as other people
77. Most people feel I get along OK in games with older people
78. I can read and write as well as I need to
79. People think I obey older people at home very well
80. People think I am usually happy at school
81. Older girls always spoil the fun when we have games
82. I am as healthy as most girls who play games
83. I find it harder to learn something than some girls
84. I usually apologize when I am wrong
85. Most people at work dress better than I do
86. I can cook as well as most girls
87. I like to spy on people
88. Other girls look nicer than I do
89. People think I'm the sort of girl who does what the teacher tells me
90. My parents think I am pretty run down
91. I do my work better than most of the other girls
92. I try my best
93. I sometimes swear
94. I am scared most of the time
95. I am about as pretty as the rest of my family
96. I am pretty lucky

(continued...)

Item No.

97. I have as many friends in school as the other kids do
98. I am as strong as the rest of my family
99. I am as happy at school as most girls
100. People think I make friends easily with older people
101. I am too shy for my own good
102. At home, they say I look nice
103. I cheat when I get a chance
104. Some of the girls I play with think they play better than I can
105. I feel tired a lot
106. Some girls think I am a cry baby
107. My looks are as nice as any who go to school
108. I get excited too easily when things go wrong
109. I am as popular around home as most girls my age
110. People think I have a lot of friends in school
111. Other girls think I could be more friendly with them
112. I can do most of the things I try
113. My mother thinks I am weaker than the rest of the family
114. School work is just too hard for me
115. I am full of fun
116. I am a pleasing person
117. My looks are good enough for school
118. I try to do my best
119. A lot of girls in school are prettier than I am
120. In sports, the girls think I cry more easily than other girls
121. I do my work well
122. Most people think I am strong enough to play games
123. Most people think I play as well as other girls
124. A lot of jobs are too hard for me
125. Sometimes I think of things too bad to talk about
126. I think I am a bright girl
127. In games people feel that I am too hard to get along with
128. I usually look pretty nice around the house
129. When we play games, other girls think I look as nice as they do
130. I am always good
131. I am easy to get along with
132. I like to make people feel happy
133. Others think I learn school work easily
134. Others think I can get along better with older people in sports and games than most girls do
135. I need someone to want me
136. I feel I am someone special
137. I am usually fairly happy
138. People think I have fewer friends at work than most girls
139. I always have good manners
140. It is hard for me to make up my mind
141. My looks would help me in any job
142. At school I am as healthy as anyone
143. Some girls get along better with older people than I do
144. My feelings are easily hurt
145. I can sew as well as most girls

(continued...)

Item No.

146. People think I have a hard time getting along with girls at school
147. People think I get upset more easily than other girls
148. I feel as happy around older people as other girls do
149. People think other girls are happier about working than I am
150. Sometimes I get cross.

APPENDIX G

RAW SCORES ON ALL BASIC STATUS VARIABLES FOR ALL SUBJECTS, YEARS I-III

Code	Sex	Race	Drawings			Self-Concept Scale			Interviews			Level of Asp.			Asp. Index		
			I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
001	F	W	27	37	36	126	129	134	24	15	24	.64	2.25	1.31	5.50	7.00	9.00
003	F	N	44	40	42	124	127	121	22	18	17	.76	.71	1.15	7.00	6.33	9.50
005	F	W	38	42	34	135	130	133	17	21	25	1.60	1.65	1.53	12.25	9.33	8.80
006	F	N	38	39	38	66	50	52	12	8	15	.68	.78	1.17	5.00	5.50	6.75
007	F	W	39	35	35	81	96	91	15	15	19	.74	.79	.96	6.67	6.00	8.80
014	M	N	36	17	26	85	89	86	20	22	10	.67	.97	1.12	4.80	5.00	9.80
016	F	N	42	40	39	102	108	121	15	19	19	1.06	.77	1.03	8.50	5.00	10.00
018	M	W	47	39	34	135	116	106	19	24	25	.91	.44	.68	4.33	3.00	4.75
009	M	N	53	53	57	106	111	100	20	24	16	.69	.93	1.29	3.00	7.75	8.80
011	F	W	41	41	40	115	110	115	16	10	16	1.74	2.40	3.70	11.00	11.00	6.25
013	M	N	27	32	35	104	110	126	25	23	25	1.03	.74	1.21	7.33	4.50	9.75
012	F	N	40	44	37	118	120	124	9	18	12	1.09	1.30	1.07	8.00	7.75	8.00
101	M	N	32	36	38	120	115	145	16	11	20	1.36	1.04	1.41	11.00	10.20	10.60
104	M	W	29	33	34	72	76	84	11	14	14	.81	.88	.87	8.00	6.60	6.00
106	M	W	26	31	26	87	98	112	22	20	13	.53	1.46	1.23	5.60	11.20	9.60
108	M	W	35	34	32	106	109	119	14	20	23	.94	1.38	.99	7.67	11.00	7.00
110	M	N	46	40	45	95	94	106	17	18	24	1.25	.94	1.33	9.75	9.20	9.00
114	F	W	32		32	104		120	15		12	.75		1.05	5.50		9.00
113	F	W	45	37	39	126	111	98	16	21	22	.53	1.00	.96	6.75	9.40	6.25
115	M	W	19	23	21	117	97	107	9	8	10	.62	1.41	1.11	6.25	10.60	9.20
304	M	W	25	47	41	129	110	117	15	9	16	1.06	1.04	.75	10.40	5.75	3.80
305	F	N	41	26	42	90	87	95	12	17	18	.86	1.33	.84	6.00	8.20	7.20
306	M	N	21	41	40	87	102	94	16	15	12	.97	1.15	1.20	7.60	11.60	11.75
308	F	W	42	41	35	98	84	101	16	7	17	1.13	1.04	1.16	9.40	9.00	10.00
309	F	W	19	34	54	70	76	71	10	14	12	1.45	1.13	1.04	9.60	6.40	9.75
310	M	W	34	31	37	99	109	107	19	17	23	1.21	1.47	.78	9.20	9.00	7.50
311	M	N	7	38	33	109	119	130	23	25	22	1.19	1.29	1.01	10.00	7.00	7.80
312	M	W	15	20	18	119	112	117	19	15	25	2.50	2.18	1.39	9.40	9.25	9.20
202	F	W	33	14	36	87	97	67	11	9	13	.99	1.00	.98	8.25	8.75	7.80
203	F	W	39	41	36	83	89	86	9	10	8	.55	.80	.81	6.00	7.00	7.00
204	M	W	33	22	30	99	116	104	15	15	19	1.09	.87	.98	8.00	6.75	6.00
205	F	N	44	24	38	109	95	102	17	11	23	.89	1.90	1.16	7.00	7.00	9.60
206	M	N	7	21	15	109	115	119	18	22	19	.71	.84	1.11	4.50	6.00	9.40
207	M	W	34	35	42	71	102	115	14	17	25	.65	.54	.79	5.50	4.33	4.80
208	M	W	40	42	49	104	117	108	15	16	15	1.18	1.16	.99	10.00	9.00	7.67
210	F	W	44	40	47	104	97	106	17	15	14	1.15	1.04	.93	11.50	7.00	7.40

Code	Sex	Race	Green Proportion I	Green Proportion II	Green Proportion III	Production I	Production II	Production III	Ratings I	Ratings II	Ratings III	Purdue I	Purdue II	Purdue III	Vineland I	Vineland II	Vineland III
001	F	W	.08	.33	.08	31	31	44	88	126	134	148	148	180	77.0	81.0	85.0
003	F	N	.78	.89	.83	58	62	88	91	70	77	226	276	247	79.0	86.0	87.0
005	F	W	0.00	.22	0.00	23	22	32	91	78	96	43	36	39	75.5	78.0	79.0
006	F	N	.25	.33	.33	35	36	51	51	137	142	192	206	192	80.0	88.5	87.0
007	F	W	0.00	.08	.27	24	26	53	103	111	90	203	204	203	82.5	86.5	84.0
014	M	N	.89	.83	.93	64	51	93	85	97	99	253	242	241	82.5	89.0	86.0
016	F	N	.33	.13	.25	32	36	67	107	109	85	234	247	242	84.0	82.5	84.0
018	M	W	.67	.58	.67	51	56	92	184	107	121	235	253	264	77.5	86.5	84.0
009	M	N	.56	.75	.80	56	45	86	75	116	95	236	248	250	81.0	86.0	86.0
011	F	W	.17	.50	.25	27	30	45	198	183	162	115	182	176	76.0	81.0	80.5
013	M	N	1.00	.75	1.00	72	54	89	94	67	82	257	267	232	85.5	91.0	88.0
012	F	N	.78	.67	.89	44	56	87	101	71	81	226	242	260	85.0	89.0	90.0
101	M	N	.83	.73	.40	58	46	64	114	85	95	221	224	230	85.5	90.0	87.5
104	M	W	0.00	.60	.27	33	46	62	161	120	101	179	185	222	77.0	80.0	76.5
106	M	W	.25	.47	.27	39	35	60	123	113	146	181	183	210	76.5	84.0	83.0
108	M	W	.67	.60	.40	47	44	72	88	88	101	209	224	258	77.5	86.0	86.5
110	M	N	.83	.93	.83	66	63	82	157	75	97	263	262	254	81.0	88.0	91.5
114	F	W	.33		.58	37		66	149		96	206		225	79.0		82.0
113	F	W	.58	.80	1.00	54	65	85	110	77	89	197	245	267	83.5	91.5	90.5
115	M	W	.58	.73	.58	48	44	74	92	84	99	197	185	210	82.0	88.0	85.5
304	M	W	.40	.17	.13	42	60	51	95	108	109	173	221	216	75.0	83.5	83.0
305	F	N	.42	.73	.73	48	80	66	138	109	100	139	195	198	76.5	84.0	87.0
306	M	N	.47	.60	.58	46	75	60	88	90	68	210	253	248	92.0	88.0	88.0
308	F	W	.53	.42	.33	45	68	56	82	102	98	195	229	233	83.0	80.5	87.0
309	F	W	.60	.93	.58	48	99	60	97	75	68	231	223	253	83.0	85.0	87.0
310	M	W	.73	.87	.75	69	86	68	84	105	95	214	271	247	88.0	89.0	88.0
311	M	N	.53	.67	.58	49	75	57	76	87	117	238	232	249	83.5	89.0	87.0
312	M	W	.07	.17	.07	21	42	33	169	133	124	111	134	152	80.0	80.5	84.0
202	F	W	.92	.67	.93	64	88	80	69	80	72	241	249	274	82.0	87.0	84.0
203	F	W	.17	.33	.33	48	61	50	118	119	100	178	196	171	82.5	83.0	87.0
204	M	W	1.00	.92	1.00	75	77	74	91	93	99	205	234	230	88.0	82.0	90.0
205	F	N	.83	.33	.47	51	64	59	100	122	126	194	176	198	84.0	86.0	89.5
206	M	N	.42	.56	.73	55	80	65	86	103	86	212	194	229	87.5	87.0	87.0
207	M	W	.50	.33	.60	51	59	67	99	98	102	220	240	263	77.0	81.0	84.0
208	M	W	.67	.42	.44	47	63	55	108	117	104	248	223	225	81.0	80.5	82.0
210	F	W	.67	.50	.33	50	58	56	116	132	111	152	186	211	81.0	83.5	84.5

Code	Sex	Race	WISC IQ I	WISC IQ II	WISC IQ III	WISC Verbal I	WISC Verbal II	WISC Verbal III	WISC Performance I	WISC Performance II	WISC Performance III	Chicago IQ	Employability Score	Hi-Lo
001	F	W	64	56	66	26	20	33	26	22	20	70	71.98	1
003	F	N	66	69	75	29	30	27	25	32	39	69	126.93	3
005	F	W	59	64	61	27	31	28	17	22	18	64	82.16	1
006	F	N	68	66	75	19	18	27	37	39	39	69	72.70	1
007	F	W	52	59	70	24	27	33	10	22	25	60	99.06	2
014	M	N	70	75	91	19	28	26	39	44	61	70	119.79	3
016	F	N	57	58	69	27	27	28	14	20	29	58	109.73	3
018	M	W	68	76	83	21	22	24	35	50	52	75	108.81	2
009	M	N	76	80	85	31	28	33	36	48	47	74	117.19	3
011	F	W	46	56	58	10	21	19	8	23	23	59	59.46	1
013	M	N	70	77	90	33	37	45	25	33	41	63	125.22	3
012	F	N	70	67	72	26	28	29	32	32	32	70	124.41	3
101	M	N	63	67	74	24	27	27	25	31	37	67	103.11	3
104	M	W	53	63	69	19	18	21	16	35	36	63	99.01	1
106	M	W	54	76	74	19	32	31	18	36	33	63	76.58	1
108	M	W	62	75	83	16	27	26	32	42	50	68	105.41	3
110	M	N	81	91	88	35	32	36	39	59	48	74	113.69	3
114	F	W	64		61	25		27	26		19	61	103.92	3
113	F	W	59	71	70	22	29	31	22	32	27	66	119.37	3
115	M	W	68	66	80	21	22	30	43	36	43	62	107.63	3
304	M	W	67	63	73	19	15	21	37	34	42	66	87.21	1
305	F	N	51	50	50	15	14	15	14	17	16	65	102.04	2
306	M	N	71	83	83	24	30	30	36	47	46	71	113.24	3
308	F	W	63	67	72	20	25	34	32	30	28	59	96.58	1
309	F	W	83	83	95	28	31	38	48	46	55	78	113.24	3
310	M	W	82	93	83	25	32	27	52	59	49	86	105.67	3
311	M	N	74	79	77	28	31	32	36	40	37	73	89.23	1
312	M	W	44	48	49	13	15	17	13	14	13	60	69.64	1
202	F	W	80	88	89	25	36	28	47	48	57	65	124.16	3
203	F	W	59	67	66	13	22	14	30	33	39	65	91.80	1
204	M	W	62	67	72	24	23	26	28	31	35	69	107.63	3
205	F	N	77	83	83	26	28	27	42	49	50	71	85.34	1
206	M	N	82	88	93	30	36	39	45	48	51	70	107.98	3
207	M	W	64	71	74	25	22	27	29	38	37	60	101.74	2
208	M	W	91	101	96	36	43	42	57	59	53	82	93.12	1
210	F	W	64	61	67	20	17	16	33	29	38	56	90.47	1

7

			Drawings			Self-Concept Scale			$LA_b/Prod_a$		Production		Ratings		Purdue	
Code	Sex	Race	I	II	III	I	II	III	I	II	I	II	I	II	I	II
002	F	W	42			116			.95		53		78		202	
004	F	W	36	32		114	114		1.17	1.09	51	52	78	79	205	204
008	M	W	49	45		92	73		.80	.49	33	30	123	142	179	163
010	F	W	29	37		143	145		.92	.84	38	38	75	75	216	242
015	F	W				115			1.00		45		117		190	
017	M	W				120	88		1.02	.76	64	41	153	101	224	225
102	F	N				80			1.14		63		97		186	
103	F	N				129			1.41		40		142		206	
105	F	W				121			1.00		50		158		203	
107	F	W				95			.90		46		135		213	
109	F	W				103			.66		43		113		189	
111	M	W	30	33		63	88		.08		35	36	150	126	182	202
112	F	W				119			.72		50		101		206	
201	M	N	41	35	50	100	113	99	1.08	.87	58	63	87	121	206	201
209	F	W	34	37	30	124	136	141	.91	.92	41	86	103	66	208	214
301	F	W				131			1.04		43		89		189	
302	M	W	32	29	33	105	115	119	1.38	1.53	29	47	132	174	156	168
303	F	W				105			1.08		46		89		228	
307	F	N	37	37		127	128	106	1.60	1.27	29	34	113	122	112	140

Code	Sex	Race	Vineland			WISC IQ			WISC Verbal		WISC Performance		Chicago IQ
			I	II	III	I	II	III	I	II	I	II	
002	F	W	85.5			63			30		24		67
004	F	W	83.5	91.0		58	61		26	25	20	26	63
008	M	W	78.0	81.0		67	64		25	19	30	34	78
010	F	W	87.0	86.5		56	56		22	22	17	21	61
015	F	W	82.0			54			24		16		70
017	M	W	78.0	84.5		80	85		30	39	44	48	72
102	F	N	85.5			76			27		37		71
103	F	N	82.0			72			31		31		75
105	F	W	83.5			64			19		26		66
107	F	W	83.5			67			24		34		70
109	F	W	76.5			56			26		14		68
111	M	W	72.5	82.0		48	54		12	14	17	27	57
112	F	W	88.0	86.0		56			21		18		70
201	M	N	87.5	87.0		68	72	83	20	28	36	33	74
209	F	W	83.0	83.0		56	62	57	22	25	17	23	66
301	F	W	86.5			65			25		27		72
302	M	W	84.5	85.5		52	56	54	10	15	26	24	53
303	F	W	85.0			75			21		51		74
307	F	N	81.0	83.0	84.5	64	72		31	25	19	24	62